British West Indies Central Sugar Cane Breeding Station, Barbados

FOURTEENTH ANNUAL REPORT

Ending September 30, 1947

Advocate Co. Ltd.,—Printers.

I. FOREWORD

ADVISORY COMMITTEE

The fourteenth meeting of the Advisory Committee was held at Jamaica from the 23rd to the 26th of September, 1947, and the Proceedings of the Committee which have been circulated are appended to this Report.

At this meeting, the position with regard to quarantine in Trinidad of seedling canes distributed from Barbados to other British West Indian Colonies was fully reviewed. The Committee finally decided that seedling planting material should, in future, be distributed from Barbados to the Departments of Agriculture of the contributing colonies provided that certain safeguards were observed.

The Committee was informed that the countries of Venezuela, Guadeloupe, Martinique and the Dominican Republic were now subscribing to the funds of the Station and were receiving cane planting material.

The Committee decided to make an application for a Research Grant under the Colonial Development and Welfare Act to permit the appointment of a Cyto-Geneticist to the staff of the Station for a period of five years.

TECHNICAL

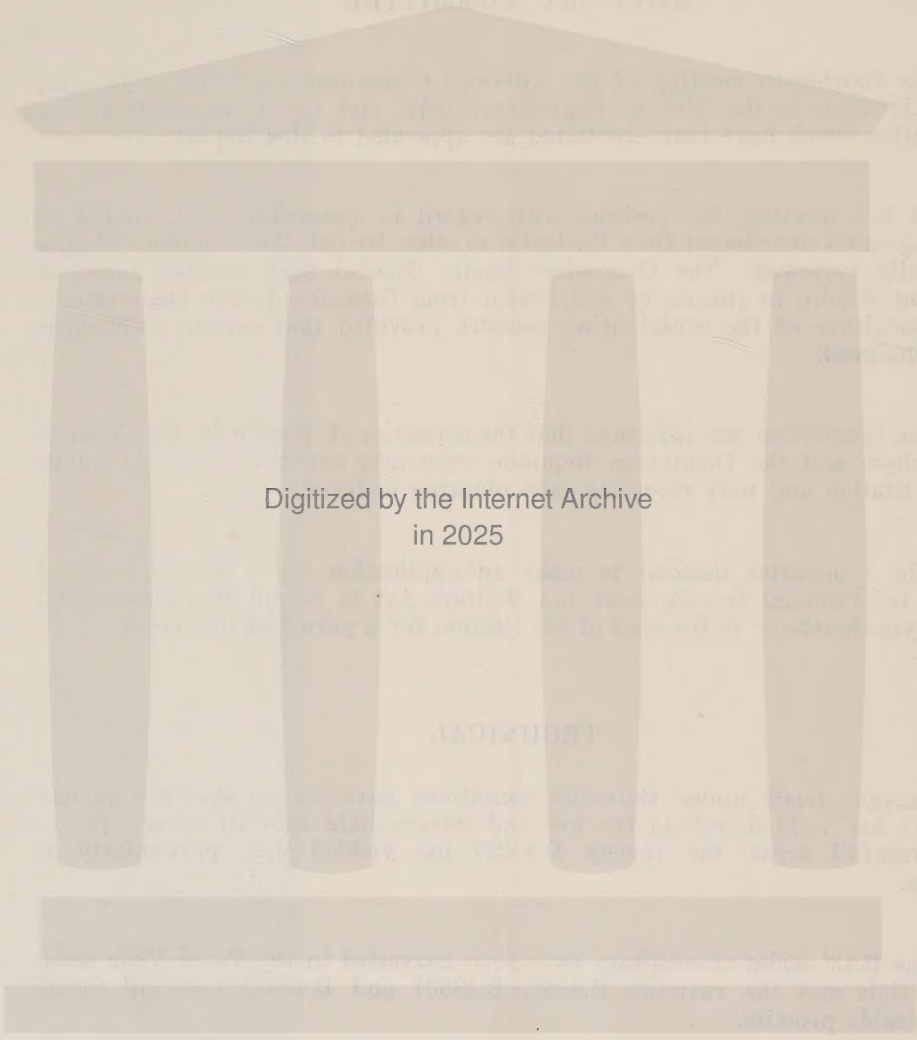
Further trials under Barbados conditions have shown that the variety B.41211 has yielded well in the low and intermediate rainfall areas. In the high rainfall areas, the variety B.41227 has yielded well, particularly as ratoons.

The B.43′ series of seedlings have been harvested in the Third Year Seedling Trials and the varieties B.4362, B.43337 and B.43391 have all shown considerable promise.

S. J. SAINT,

Director of Agriculture.

Chairman of Advisory Committee.



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British West Indies Central Sugar Cane Breeding Station, Barbados

FOURTEENTH ANNUAL REPORT FOR THE YEAR ENDING THE 30TH OF SEPTEMBER, 1947

II. SUGAR CANE BREEDING — SEEDLING SELECTION AND TRIALS

(i) SUGAR CANE BREEDING—B.49′ AND B.s.48′ SERIES

The usual methods were employed in the controlled crossing of various sugar cane varieties at Groves Agricultural Station from October to December, 1946. The season was exceptionally dry, and generally speaking, arrowing was light and late. Some difficulty was experienced with arrows which dried in the sheath without emerging while others emerged as a mass of dry fuzzy material in which no flowers had developed.

Germination of seedlings from the various crosses was on the whole disappointing, for although seedlings were obtained from a very good percentage of the crosses, the number of seedlings per cross was very small.

Table I gives under group heads a list of the crosses made, the number of seedlings germinated and the number potted.

TABLE I

Number of Seedlings in each Group Germinated, Potted and Planted in the Field Nursery—B.49′ Series and the First Year Seedling Trial —B.s.48′ Series

Group	No. of crosses	No. of seedlings germinated	No. potted	No. planted in Field Nursery and/or First Year Trial
S. officinarum x S. spontaneum				
3rd nobilisation Local	1	117	117	108
2nd „ Glagah	1	300	300	223
4th „ Glagah	1	4,000	300	225
2nd „ Dacca	1	140	136	136
Noble x Glagah x Local	2	370	360	334
Noble x Glagah x Celebes	1	320	320	278
Noble x Glagah x Local x Celebes..	2	995	920	741

TABLE I—*Cont'd*

Group	No. of crosses	No. of seedlings germinated	No. potted	No. planted in Field Nursery and/or First Year Trial
S. officinarum x S. spontaneum x S. barberi				
Noble x Local x Chunnee	12	4,457	4,150	3,594
Noble x Glagah x Chunnee	8	3,268	2,589	2,368
Noble x Glagah x Local x Chunnee .	26	18,507	5,964	5,514
Noble x Glagah x Celebes x Chunnee ..	10	3,293	2,183	1,955
Noble x Local x Celebes x Chunnee	9	4,538	3,383	2,646
Noble x Local x Glagah x Celebes x Chunnee ..	3	900	750	714
S. officinarum x S. barberi				
3rd nobilisation Chunnee	1	4	—	—
S. officinarum x S. spontaneum x S. robustum				
Noble x Glagah x Robustum ..	2	116	100	68
S. officinarum x S. barberi x S. robustum				
Noble x Chunnee x Robustum ..	1	13	13	13
S. officinaru mx S. spontaneum x S. barberi x S. robustum				
Noble x Glagah x Chunnee x Robustum ..	2	119	91	72
Noble x Local x Chunnee x Robustum ..	10	1,634	1,231	1,096
Noble x Local x Glagah x Chunnee x Robustum ..	3	1,349	279	222
S. officinarum x S. spontaneum x S. sinense				
Noble x Glagah x Sinense	1	—	—	—
S. officinarum x S. spontaneum x S. barberi x S. sinense				
Noble x Local x Chunnee x Sinense	2	276	250	217
Noble x Glagah x Local x Chunnee x Sinense ..	8	1,619	1,350	1,217
Noble x Glagah x Celebes x Chunnee x Sinense ..	1	110	110	85
Noble x Local x Celebes x Chunnee x Sinense ..	1	36	35	35
S. officinarum x S. spontaneum x S. barberi x S. robustum x S. sinense				
Noble x Local x Chunnee x Robustum x Sinense ..	1	18	18	14
Grand Totals	110	46,499	24,949	21,875

PROGRESS WITH SEEDLINGS OF THE B.48′ AND B.s.47′ SERIES

The B.48′ and B.s.47′ Series were bred in October, November and December 1945, and potted in January, February and March, 1946. The B.48′ Series was planted in the First Year Nursery in May, 1946, and from this into the First Year Seedling Trial in December 1946. This First Year Seedling Trial is usually planted about the end of October of each year, but, owing to the exceptionally dry weather conditions at this time, planting of this trial had to be postponed to December, when conditions were more favourable. These seedlings will be reaped in 1948.

The B.s.47′ Series was planted in a First Year Seedling Trial in May, 1946, and these seedlings were reaped in February, 1947. The new B.s. series of seedlings has been introduced with the object of selecting early maturing or short season types of canes which are specially suited to the conditions obtaining in British Guiana, and to meet the demand from Trinidad and Jamaica for varieties for spring planting. Table II gives under group heads, a summary of the number of crosses, together with the numbers of seedlings for each group planted in the Field Nursery and in the B.48′ Series First Year Trial, and Table III gives similar information for the B.s.47′ Series.

Table II

Numbers of crosses and seedlings in each group planted in the First Year Seedling Trial, December 1946—B.47′ Series

Group	No. of crosses	No. planted in Field Nursery	No. planted in First Year Seedling Trial
S. officinarum x S. spontaneum			
Noble x Glagah	5	678	515
Noble x Dacca	1	48	40
Noble x Celebes	1	150	100
Noble x Local x Celebes	2	450	300
Noble x Glagah x Celebes	2	650	550
Noble x Glagah x Local	6	960	710
Noble x Glagah x Local x Celebes	1	150	100
	17	3,086	2,315
S. officinarum x S. spontaneum x S. barberi			
Noble x Celebes x Chunnee	1	300	200
Noble x Glagah x Chunnee	7	1,090	750
Noble x Local x Chunnee	12	2,090	1,588
Noble x Celebes x Glagah x Chunnee	6	1,050	700
Noble x Celebes x Local x Chunnee	4	1,230	1,000
Noble x Glagah x Local x Chunnee	21	3,580	2,663
Noble x Glagah x Local x Celebes x Chunnee	1	150	100
	52	9,490	7,001
S. officinarum x S. spontaneum x S. sinense			
Noble x Celebes x Glagah x Sinense	2	177	148
S. officinarum x S. spontaneum x S. barberi x S. sinense			
Noble x Glagah x Chunnee x Sinense	3	89	71
Noble x Glagah x Local x Chunnee x Sinense	1	87	80
	4	176	151
S. officinarum x S. robustum			
Noble x Robustum	4	510	370
S. officinarum x S. spontaneum x S. robustum x S. sinense			
Noble x Glagah x Robustum x Sinense	2	176	130

TABLE II—*Cont'd*

Group	No. of crosses	No. planted in Field Nursery	No. planted in First Year Seedling Trial
S. officinarum x S. barberi x S. sinense			
Noble x Chunnee x Sinense	1	55	41
S. officinarum x S. barberi x S. robustum			
Noble x Chunnee x Robustum	1	160	100
S. officinarum x S. barberi x S. spontaneum x S. robustum			
Noble x Local x Chunnee x Robustum ..	1	140	100
S. officinarum x Erianthus arundinaceous			
Noble x Erianthus	1	150	100
S. officinarum x S. spontaneum x E. arundinaceous			
Noble x Glagah x Erianthus	1	29	20
Grand Totals	87	14,149	10,476

TABLE III

Short Season Types B.s.47′ Series

Group	No. of crosses	No. of seedlings in First Year Trial
S. officinarum x S. spontaneum		
Noble x Celebes x Glagah	1	455
Noble x Glagah x Local	3	684
	4	1,139
S. officinarum x S. barberi x S. spontaneum		
Noble x Local x Glagah x Chunnee	3	716
Noble x Chunnee x Local	2	319
Noble x Chunnee x Glagah	2	538
Noble x Celebes x Local x Chunnee	2	663
	9	2,236
Grand Totals	13	3,375

The B.s. 47′ Series was reaped as First Year Seedlings in February, 1947. The seedlings were cut, bundled and laid out for inspection in the usual manner. The following data were obtained from each selection:—(i) weight, (ii) number of sound canes, (iii) number of rotten canes, (iv) percentage arrowing, and (v) juice brix values as shown by the Zeiss Hand Refractometer.

In all fifty-three selections were made. Details of the field and final selections from this trial are given in Table IV.

TABLE IV

First Year Seedlings—B.s. 47′ Series. Field and Final Selections.

Cross and Group	No. planted	No. field selected	% field selection	No. final selection	% final selection
S. offinicarum x S. spontaneum					
Noble x Glagah x Local					
Co.421 x B.41211	494	34	7	6	1
Co.421 x B.41261	90	2	2	1	1
P.O.J.2878 x B.41211	100	3	3	2	2
Noble x Celebes x Glagah					
B.35247 x B.3337	455	25	5	6	1
Noble x Celebes x Glagah x Local					
B.35197 x B.34104	433	29	7	7	2
S. officinarum x S. spontaneum x S. barberi					
Noble x Chunee x Glagah					
B.35207 x P.O.J.2878	293	12	4	6	
B.39177 x B.37193	94	—	—	—	—
B.4145 x B.37193	245	11	4	1	—
Noble x Local x Chunnee					
B.35218 x B.4098	225	10	4	6	3
Noble x Local x Glagah x Chunnee					
B.38233 x B.34104	120	6	5	2	2
B.4145 x B.34104	298	17	6	4	1
Co.421 x B.4098	298	20	7	8	3
Noble x Local x Celebes x Chunnee					
B.35157 x B.4098	230	11	5	4	2
	3,375	180		53	

PROGRESS WITH SEEDLINGS OF THE B.47′ SERIES

This series was bred in 1944, potted and planted in the Field Nursery in 1945, and from the latter into the First Year Seedling Trial in October of the same year. This trial was reaped in February 1947, when a total of 366 selections were made. Seedlings obtained from the following crosses were outstanding, and gave a high percentage of selections:—

B.35247 x B.3337
B.37161 x B.3337
B.37161 x B.4098
B.37161 x P.O.J.2878
B.39207 x B.34104
B.40272 x B.37193
B.40272 x Co.290
Co.421 x B.37193

The cross B.37161 x B.4098 appeared to be particularly outstanding. The seedlings were long, thick, clean, trashed well and had good juice brix values.

Details of the field and final selections for this trial are given in Table V.

TABLE V.

First Year Seedling Trial B.47' Series

Cross	No. of seedlings reaped	No. field selected	% field selection	No. final selection	% final selection
S. officinarum x S. spontaneum					
Noble x Glagah					
B.3353 x B.3337	77	4	5	3	4
B.3439 x B.39229	60	2	3	2	3
B.34102 x B.3337	303	22	7	14	5
B.37266 x B.3337	77	2	3	—	—
Co.421 x B.603	80	1	1	1	1
Co.421 x B.H.10(12)	80	1	1	—	—
P.O.J.2878 x B.H.10(12)	70	2	3	1	1
Noble x Celebes x Glagah					
B.35197 x B.3337	100	8	8	6	6
B.35247 x B.3337	600	45	8	14	2
B.37162 x P.O.J.2878	80	2	3	1	1
B.37227 x B.3337	80	6	8	2	3
Noble x Celebes x Glagah x Local					
B.39157 x B.39257	80	6	8	2	3
S. officinarum x S. spontaneum x S. barberi					
Noble x Glagah x Chunnee					
B.3365 x B.3337	300	18	6	8	3
B.3365 x B.4148	80	2	3	2	3
B.3365 x B.41203	80	4	5	3	4
B.3439 x B.37175	160	11	7	8	5
B.35207 x B.37175	80	1	1	1	1
B.35207 x B.41204	80	6	8	2	3
B.35207 x P.O.J.2878	500	20	4	8	2
B.37161 x B.3337	200	23	12	13	7
B.37161 x B.37175	80	11	14	5	6
B.37161 x P.O.J. 2878	400	40	10	29	7
B.41277 x B.37193	80	2	3	1	1
Co.421 x B.37175	80	3	4	1	1
Co.421 x B.37193	80	19	24	11	14
Co.421 x B.41227	200	8	4	5	3
Co.421 x B.41229	80	1	1	1	1
Noble x Local x Chunnee ..					
B.3365 x B.34104	300	10	3	5	2
B.3439 x Co.290	60	5	8	1	2
B.35207 x B.41211	80	7	9	2	3
B.35207 x B.41261	80	3	4	2	3
B.35218 x B.4098	125	6	6	3	3
B.35218 x B.40115	60	—	—	—	—
B.37161 x B.4098	200	30	15	21	11
B.37161 x C.P.28-11	30	1	3	—	—
B.39207 x B.34104	60	9	15	5	8
B.4091 x B.34104	70	6	9	2	3
B.4096 x B.34104	80	6	8	3	4
B.40105 x B.34104	60	4	7	3	5
B.40117 x B.34104	22	3	14	3	14
Noble x Celebes x Chunnee					
B.3365 x B.39274	80	5	6	2	3
B.35247 x B.37193	99	8	6	3	3
B.35247 x B.40175	80	8	10	5	6

TABLE V.—*Cont'd*

Cross	No. of seedlings reaped	No. field selected	% field selection	No. final selection	% final selection
Noble x Glagah x Local x Chunnee					
B.3354 x B.34104	200	18	9	8	4
B.3371 x B.34104	80	6	8	1	1
B.34102 x B.34104	200	16	8	10	5
B.34102 x Co.290	50	—	—	—	—
B.34117 x P.O.J.2878	80	4	5	1	1
B.35218 x B.(30)L7	127	6	5	4	3
B.35218 x P.O.J.2878	80	3	4	3	4
B.38203 x B.34104	100	4	4	4	4
B.4094 x P.O.J.2878	80	2	3	1	1
B.4096 x B.3337	80	9	11	5	6
B.40116 x B.3337	18	3	15	1	6
N.40157 x B.34104	60	2	3	1	2
B.4111 x B.34104	80	3	4	3	4
B.41238 x B.34104	90	3	3	2	2
P.O.J.2878 x B.34104	300	12	4	6	2
Co.421 x B.34104	120	9	8	5	4
Noble x Celebes x Local x Chunnee					
B.35197 x B.34104	500	22	4	15	3
B.35197 x Co.281	81	1	1	—	—
B.35218 x Tabongo	78	3	4	1	1
B.35247 x B.39178	79	—	—	—	—
B.35247 x B.4098	84	6	7	3	4
B.35247 x C.P.28—11	42	2	4	1	2
B.37162 x B.34104	77	5	6	—	—
B.37227 x B.34104	84	4	5	2	2
B.39157 x B.34104	80	7	9	4	5
Noble x Celebes x Glagah x Chunnee					
B.35197 x B.41227	100	6	6	4	4
B.35247 x B.37175	80	4	5	2	3
Noble x Celebes x Glagah x Local x Chunnee					
B.35247 x Co.419	100	6	6	4	4
S. officinarum x S. spontaneum x S. sinense					
Noble x Celebes x Sinense					
B.35247 x B.35269	80	3	4	2	3
Noble x Glagah x Sinense					
B.40272 x B.H.10(12)	80	3	4	2	3
Co.421 x B.35269	80	2	3	1	1
Merthi x P.O.J.2878	30	3	9	1	3
S. officinarum x S. barberi x S. sinense					
Noble x Chunnee x Sinense					
Kavanjire x B.37193	72	1	1	1	1
S. officinarum x S. spontaneum x S. barberi x S. sinense					
Noble x Glagah x Chunnee x Sinense					
B.3365 x B.35276	80	4	5	2	3
B.3365 x B.37261	80	2	3	1	1
B.40272 x B.37193	200	16	8	10	5

TABLE V.—*Concluded*

Cross	No. of seedlings reaped	No. field selected	% field selection	No. final selection	% final selection
Noble x Local x Chunee x Sinense					
B.39254 x B.34104	80	3	4	3	4
Uba x B.34104	50	3	6	1	2
Noble x Glagah x Local x Chunnee x Sinense					
B.40272 x Co.290	1,000	67	7	39	4
S. officinarum x S. spontaneum x S. robustum					
Noble x Glagah x Robustum					
B.3172 x 28N.G.251	48	2	4	1	2
Co.421 x C.P.36-127	80	2	3	2	3
C.P.36-158 x P.O.J.2878	33	1	3	—	—
Noble x Celebes x Robustum					
B.35197 x 32 M.Q.629	44	2	5	1	2
B.35197 x 28 N.G.251	70	6	9	2	3
B.35247 x 32 M.Q.657	80	6	8	2	3
S. officinarum x S. barberi x S. robustum x S. spontaneum					
Noble x Chunnee x Local x Robustum					
B.35218 x C.P.36-134	30	1	3	—	—
B. 35218 x C.P.36-137	25	3	12	—	—
Grand Totals	11,005	677		366	

PROGRESS WITH SEEDLINGS OF THE B.46′ SERIES

This series was reaped as First Year Seedlings during the 1946 crop season, when 404 selections were made. These selections were multiplied at Codrington, and in October 1946, a further selection reduced this number to 270. These seedlings were planted in the Second Year Seedling Trials at the low rainfall station, Codrington, (2 trials) and in duplicate trials at the high rainfall stations, Pool and Colleton. These trials will be reaped during the 1948 crop season.

PROGRESS WITH SEEDLINGS OF THE B.45′ SERIES

The B.45′ Series of seedlings was planted in the Second Year Seedling Trials in November 1945 at the low rainfall Station, Pine, (2 trials), and at the high rainfall stations, Pool and Bowmanston.

Unfortunately, both the trials at Pool and Bowmanston were burnt at the same time, and the former after the duplicate trail at the Pine had already been reaped. Further, the estate started reaping the trial without informing the Station that it had been burnt. It was therefore impossible to make any selections from this half of the B.45′ Series. The trial at Bowmanston was reaped as burnt canes and selections were made from the duplicate trial at the Pine. In all fourteen seedlings were selected of which three were selected for breeding purposes only. The data obtained from these together with the data from the standard varieties are given in Table VI.

TABLE VI

B.45' Series—Second Year Seedling Trials—Pine and Bowmanston

Date of Reaping: Bowmanston 5—7/3/47; Pine: 10—14/4/47

Variety	Parentage	No. of canes (rotten)		% Arrowing		Z. H. R. Brix		Weight (tons per acre)	
		Pine	Bowmanston	Pine	Bowmanston	Pine	Bowmanston	Pine	Bowmanston
Group VIII									
B.37161	Standard	142(6)	148(0)	—	43	22.8	19.6	28.12	43.09
B.4098	Standard	160(3)	143(0)	1	40	24.0	21.7	32.85	36.98
B.45188	B.3354 x B.35104	121(7)	140(0)	—	14	22.8	19.9	28.29	44.20
B.45189	„ x „	138(6)	134(0)	—	21	25.9	20.9	31.91	39.65
B.45200	B.3371 x B.34104	149(5)	146(0)	—	5	22.1	20.3	28.04	38.70
Group X									
B.37161	Standard	97(4)	131(0)	2	34	22.2	19.6	30.36	41.62
B.4098	Standard	140(7)	154(0)	6	48	23.0	21.1	39.56	29.41
B.45224	B.3439 x 32 M.Q.579	178(12)	97(0)	—	36	22.1	20.8	33.80	40.33
B.45229*	B.35206 x 32 M.Q.629	124(5)	125(0)	—	11	23.2	20.5	21.28	23.48
B.45237	B.37161 x B.37256	223(6)	189(0)	1	48	22.5	20.5	37.67	35.43
Group XI									
B.37161	Standard	122(6)	168(3)	—	49	22.1	19.4	38.96	37.88
B.4098	Standard	160(8)	145(2)	2	68	23.6	21.4	42.83	30.87
B.45267	B.39254 x Co.290	166(14)	212(1)	2	22	23.1	20.9	36.72	38.36
B.45270	B.4092 x B.37193	147(8)	168(1)	—	4	23.9	20.8	35.52	41.37
Group XII									
B.37161	Standard	98(4)	151(0)	3	33	22.7	19.4	32.51	39.73
B.4098	Standard	153(6)	147(0)	1	52	22.1	21.7	35.95	32.34
B.45274	Co.421 x B.34104	140(5)	188(4)	—	17	20.0	19.5	25.71	35.35
B.45277	Co.421 x B.34104	150(3)	193(1)	36	80	22.7	20.0	31.56	33.02
B.45292	B.3439 x B.(30) L.7.	137(2)	160(1)	—	75	24.2	21.9	30.53	29.67
Group XIII									
B.37161(a)	Standard	101(2)	170(2)	16	30	21.1	20.0	29.58	38.27
B.37161(b)	Standard	103(0)	158(2)	11	33	21.9	19.5	29.33	40.33
B.4098	Standard	140(4)	150(1)	7	48	22.0	20.1	27.26	25.46
B.45304	B.37161 x B.37254	176(6)	218(1)	7	30	20.7	19.1	33.02	31.05
B.45312 *	B.38272 x B.34104	120(3)	168(3)	6	37	19.0	17.2	30.96	32.25
B.45313 *	„ x „	145(2)	186(2)	13	26	19.9	18.7	30.27	32.25

* For breeding plots only.

PROGRESS WITH SEEDLINGS OF THE B.44′ SERIES

These seedlings were reaped in the Second Year Seedling Trials as plant canes during the 1946 crop at the high rainfall stations, Bowmanston and Todds, and in duplicate trials at the low rainfall stations, Codrington and The Home. Unfortunately, the ratoon trial at Bowmanston was burnt along with two other Second Year Seedling Trials and a Select Seedling Ratoon Trial and could not be reaped. This trial included the two most promising seedlings of the series, and it is very regrettable that ratoon results could not be obtained. The results of the trial at Todds made it possible to discard six seedlings on ratoon performance, and indicated that at least one seedling B.4411, showed distinct promise of becoming a commercial cane. The seedlings of this series have been planted in the Third Year Trials to be reaped in the 1948 crop season.

TABLE VII

B.44′ Series—Second Year Seedling Trial—First Ratoons
Todds, Harvested 17—22/4/47

Seedling	Parentage	No. of canes (Rotten)	% Arrows	Z.H.R. Brix	Weight (tons per acre)
Group I					
B.37161 ..	Standard	107(2)	1	22.6	99.21
B.4098 ..	Standard	133(9)	53	22.8	32.16
B.4408 ..	B.3172 x B.34104	111(11)	20	22.3	34.57
B.4409 ..	B.3353 x B.34104	146(6)	18	22.9	38.53
B.4410 ..	„ x „	170(16)	44	21.6	37.32
B.4411 ..	„ x „	186(4)	30	24.1	40.59
Group II					
B.37161 ..	Standard	128(1)	8	23.1	43.09
B.4098 ..	Standard	157(6)	33	23.8	37.67
B.4425 ..	B.3354 x B.37175	140(5)	17	23.3	39.47
Group III					
B.37161 ..	Standard	113(4)	14	23.2	38.27
B.4098 ..	Standard	117(11)	41	22.5	28.21
B.4448 ..	B.3439 x Co.290	189(4)	13	24.4	37.32
B.4466 ..	B.37161 x B.3337	137(15)	12	24.4	37.24
B.4467 ..	„ x „	104(19)	49	23.4	26.57
Group IV					
B.37161 ..	Standard	121(2)	7	23.2	42.48
B.4098 ..	Standard	166(10)	21	21.5	37.07
B.4485 ..	B.37161 x B.3337	145(11)	11	22.6	36.12
B.4487 ..	„ x „	135(10)	3	21.2	34.23
B.4491 ..	„ x „	134(36)	9	22.4	29.84
Group V					
B.37161 ..	Standard	119(5)	6	22.7	40.76
B.4098 ..	Standard	125(5)	27	23.5	35.43
B.44101 ..	B.37161 x P.O.J.2878	123(14)	3	22.3	30.10
B.44109 ..	B.40272 x Co.290	95(21)	46	21.2	29.33
Group VI					
B.37161 ..	Standard	113(7)	1	22.6	41.11
B.4098 ..	Standard	139(9)	60	23.2	36.38
B.44111 ..	B.40272 x Co.290	112(21)	9	22.6	30.01
B.44113 ..	„ x „	130(16)	14	20.7	34.40
B.44127 ..	P.O.J.2878 x B.H.10(12)	112(16)	4	22.8	31.99
Group VII					
B.37161 ..	Standard	118(4)	11	22.9	43.09
B.4098 ..	Standard	173(4)	39	23.3	44.81
B.44150 ..	B.3354 x B.34104	108(19)	14	21.2	42.83
Group VIII					
B.37161 ..	Standard	120(4)	14	23.3	40.08
B.4098 ..	Standard	133(12)	50	22.7	34.92
B.44165 ..	B.3354 x B.34104	123(18)	34	24.1	33.37
B.44167 ..	B.3354 x B.35245	98(21)	40	21.4	31.91
B.44177 ..	B.3354 x B.37175	104(13)	45	22.0	32.68

PROGRESS WITH SEEDLINGS OF THE B.43′ SERIES

These seedlings were planted in the Third Year Seedling Trials in November 1945, and these were harvested during the past crop season.

This series of seedlings is perhaps the most outstanding of any series so far produced, and includes at least three seedlings which, as plant canes at any rate, appear to be definitely superior to the standard varieties under the conditions of the trials, which are representative of the major soil groups and rainfall conditions of the island. Unfortunately, the past year has been an exceptionally dry one, and may not give a true indication of the relative merits of the various varieties. However, it does indicate that these varieties are able to yield well under adverse conditions.

Table VIII

Third Year Seedling Trials—Plant Canes

Low Rainfall Black Soil Centres—Spring Hall and Kingsland

Dates of Harvesting:—Spring Hall 20 & 21/2/47; Kingsland 24 & 25/2/47

Figures represent the mean of six plots of twenty cane holes each

Variety	Parentage	Tons Cane per Acre		Z.H.R. Brix		% Sucrose in Juice		Rotten Canes per Plot	
		Spring Hall	Kingsland	Spring Hall	Kingsland	Spring Hall	Kingsland	Spring Hall	Kingsland
.37161	Standard	21.73	25.70	21.9	21.1	17.2	16.9	3	2
.4098	Standard	20.84	26.89	22.4	22.3	20.1	18.0	4	2
.4214	B.3365 x Co.290	16.56	18.38	21.2	21.4	16.7	17.8	4	5
.42114	B.35218 x P.O.J. 2878	18.13	22.02	22.1	22.3	19.2	18.6	12	3
.4306	B.35206 x P.O.J. 2878	20.11	25.88	22.2	21.6	18.2	17.5	4	5
.4327	B.34102 x B.3337	17.35	24.80	21.6	22.4	18.3	18.6	11	—
.4329	„ x „	22.85	27.20	19.4	20.3	15.7	16.2	5	2
.4362	B.37161 x P.O.J. 2878	18.72	26.80	23.2	23.1	20.2	19.3	16	6
.4363	„ x „	18.91	18.86	22.6	21.6	19.6	17.5	2	3
.4381	B.3354 x Co.290	16.58	22.55	20.2	20.3	15.8	16.2	15	9
.43127	B.37227 x B.3337	25.59	23.39	20.8	20.6	17.9	17.3	6	2
.43133	B.35247 x B.3337	23.84	27.44	20.5	20.8	17.7	16.4	4	3
.43139	B.35197 x Co.281	20.89	23.72	19.8	20.0	17.0	16.2	3	6
.43214	B.3353 x Co.290	18.47	24.59	20.4	21.5	17.9	18.0	5	6
.43229	B.3365 x B.34104	13.06	16.48	24.0	23.6	19.7	19.4	3	4
.43234	„ x „	16.23	18.55	19.2	20.6	15.6	17.2	3	2
.43235	„ x „	16.62	20.89	21.1	19.6	18.3	17.9	9	6
.43262	B.34102 x B.3337	19.55	20.23	20.3	20.3	16.7	17.7	12	6
.43330	B.35247 x B.3337	21.83	24.63	20.1	20.3	17.3	17.4	3	3
.43337	„ x „	25.77	32.17	19.8	20.3	17.2	17.3	2	2
.43358	B.3365 x B.34104	16.27	19.36	21.4	20.5	17.8	16.9	4	4
.43391	B.35247 x B.3337	24.91	26.38	21.2	20.8	17.4	17.5	6	5
.43398	„ x „	21.26	25.25	20.0	20.5	16.2	16.0	—	1
.43413	M.D.47 x Co.290	20.31	22.85	19.1	19.8	16.6	15.7	6	8

Table IX

Third Year Seedling Trial—Plant Canes

Intermediate Rainfall Black Soil Centre—Foursquare—Harvested 26 & 27/2/47

Figures represent the mean of six plots of twenty cane holes each

	Parentage	Tons Cane per Acre	Z.H.R. Brix	% Sucrose in Juice	No. of Rotten Canes per Plot
B.37161 ..	Standard	24.97	20.2	15.2	6
B.4098 ..	Standard	22.13	21.5	17.0	4
B.4214 ..	B.3365 x Co. 290	19.87	19.5	14.8	15
B.42114 ..	B.35218 x P.O.J.2878	20.20	21.5	16.2	11
B4.306 ..	B.35206 x P.O.J.2878	23.03	21.6	16.8	9
B.4327 ..	B.34102 x B.3337	22.49	21.6	16.7	7
B.4329 ..	„ x „	23.35	18.8	14.1	6
B.4362 ..	B.37161 x P.O.J.2878	27.63	22.2	18.9	7
B.4363 ..	„ x „	22.52	20.4	15.9	4
B.4381 ..	B.3354 x Co.290	20.72	19.3	15.1	14
B.43127 ..	B.37227 x B.3337	27.87	19.9	16.9	2
B.43133 ..	B.35247 x B.3337	28.16	20.6	14.3	5
B.43139 ..	B.35197 x Co.281	22.44	19.3	15.1	4
B.43214 ..	B.3353 x Co.290	18.40	19.6	15.2	13
B.43229 ..	B.3365 x B.34104	19.94	22.5	18.4	1
B.43234 ..	„ x „	19.44	20.0	15.7	6
B.43235 ..	„ x „	21.32	20.2	14.9	15
B.43262 ..	B.34102 x B.3337	17.30	20.0	14.6	11
B.43330 ..	B.35247 x B.3337	26.76	19.7	15.9	3
B.43337 ..	„ x „	27.70	20.2	16.6	6
B.43388 ..	B.35247 x B.3337	23.38	20.5	15.0	3
B.43391 ..	B.35247 x B.3337	29.69	19.4	16.3	3
B.43398 ..	„ x „	27.98	19.2	15.0	1
B.43413 ..	M.D.47 x Co.281	22.58	19.7	12.7	16

TABLE X

Third Year Seedling Trial—Plant Canes

Intermediate Rainfall Valley Soil Centre—Carrington

Harvested 13 & 14/3/47

Figures represent the mean of six plots of twenty cane holes each

Variety	Parentage	Tons Cane per Acre	Z.H.R. Brix	% Sucrose in Cane	Number of Rotten Canes per Plot
B.37161 ..	Standard	25.06	21.4	18.2	4
B.4098 ..	Standard	24.42	23.4	19.3	2
B.4214 ..	B.3365 x Co.290 ..	29.56*	21.9	18.8	14
B.42114 ..	B.35218 x P.O.J.2878	20.03	23.1	19.5	11
B.4306 ..	B.35206 x P.O.J.2878	22.63	22.0	18.4	7
B.4327 ..	B.34102 x B.3337 ..	22.18	22.7	18.8	8
B.4329 ..	„ x „ ..	26.16	20.5	17.2	8
B.4362 ..	B.37161 x P.O.J.2878	25.50	23.1	19.4	11
B.4363 ..	„ x „ ..	20.13	22.0	18.3	4
B.4381 ..	B.3354 x Co.290 ..	24.84	21.2	17.3	9
B.43127 ..	B.37227 x B.3337 ..	21.77	20.6	17.5	1
B.43133 ..	B.35247 x B.3337 ..	23.39	20.8	17.1	4
B.43139 ..	B.35197 x Co.281 ..	23.11	19.8	17.3	3
B.43214 ..	B.3353 x Co.290 ..	21.15	22.9	19.4	12
B.43229 ..	B.3365 x B.34104 ..	18.29	23.7	20.0	7
B.43234 ..	„ x „ ..	21.34	20.6	17.1	9
B.43235 ..	„ x „ ..	22.03	21.2	18.2	9
B.43262 ..	B.34102 x B.3337 ..	20.45	20.8	17.5	15
B.43330 ..	B.35247 x B.3337 ..	22.17	19.7	16.1	5
B.43337 ..	„ x „ ..	27.65	20.6	17.2	3
B.43388 ..	B.35247 x B.3337 ..	22.76	21.5	18.1	2
B.43391 ..	B.35247 x B.3337 ..	25.09	21.3	17.4	1
B.43398 ..	„ x „ ..	20.84	19.6	16.7	5
B.43413 ..	M.D.47 x Co.290 ..	22.28	21.7	17.5	35

* Computation for dead stools.

Table XI

Third Year Seedling Trials—Plant Canes

High Rainfall Red Soil Centres—Colleton and Blackmans

Dates of Harvesting:—Colleton 21st & 24th March, 1947
Blackmans 1st & 2nd April, 1947

Figures represent the mean of six plots of twenty cane holes each

Vraiety	Parentage	Tons Cane per Acre		Z.H.R. Brix		% Sucrose in Juice		No. of Rotten Canes per Plot	
		Colleton	Blackmans	Colleton	Blackmans	Colleton	Blackmans	Colleton	Blackmans
B.37161 ..	Standard	31.39	28.15	20.2	21.8	16.2	17.8	16	13
B.4098 ..	Standard	36.99	30.61	21.8	22.8	15.9	19.1	11	16
B.4214 ..	B.3365 x Co.290 ..	28.24	25.89	21.5	22.4	17.4	18.9	11	18
B.42114 ..	B.35218 x P.O.J.2878	28.65	25.36	21.8	22.3	17.2	18.7	21	58
B.4306 ..	B.35206 x P.O.J.2878	32.38	28.34	21.9	22.2	17.3	18.8	12	13
B.4327 ..	B.34102 x B.3337 ..	32.37	28.60	23.1	23.2	18.6	20.2	6	10
B.4329 ..	„ x „ ..	33.64	35.24	20.0	20.6	16.4	17.6	17	25
B.4362 ..	B.37161 x P.O.J.2878	32.88	29.76	22.3	24.6	18.0	20.7	21	9
B.4263 ..	„ x „ ..	34.12	27.95	20.4	21.6	17.5	17.9	18	7
B.4381 ..	B.3354 x Co.290 ..	32.15	28.15	21.3	22.0	15.5	18.1	22	12
B.43127 ..	B.37227 x B.3337 ..	34.75	33.01	20.9	21.5	18.0	18.5	14	13
B.43133 ..	B.35247 x B.3337 ..	31.62	27.62	19.8	20.9	14.7	17.8	8	5
B.43139 ..	B.35197 x Co.281 ..	30.05	28.25	18.8	19.6	15.6	16.2	3	13
B.43229 ..	B.3365 x B.34104 ..	30.96	27.41	23.6	24.2	19.7	21.1	12	21
B.43234 ..	„ x „ ..	24.47	24.38	20.4	21.1	16.0	17.1	13	27
B.43235 ..	„ x „ ..	31.09	28.44	20.5	21.7	17.7	18.3	26	27
B.43262 ..	B.34102 x B.3337 ..	26.81	26.84	21.2	21.3	17.4	18.6	23	29
B.43275 ..	B.35197 x B.34104 ..	33.50	31.38	20.5	22.6	15.7	19.3	12	9
B.43339 ..	B.35247 x B.3337 ..	27.72	29.26	20.5	20.8	16.7	18.1	19	13
B.43337 ..	„ x „ ..	38.58	35.26	20.4	21.8	15.5	18.2	13	8
B.43358 ..	B.3365 x B.34104 ..	26.76	24.86	20.5	21.9	16.7	19.2	14	10
B.43391 ..	B.35247 x B.3337 ..	42.25	42.01	20.6	22.2	16.1	18.3	12	10
B.43398 ..	„ x „ ..	34.18	28.09	20.7	22.0	15.6	17.7	13	9
B.43413 ..	M.D.47 x Co.290 ..	32.99	29.55	19.1	21.2	15.2	16.9	30	22

TA

Third Year Seedli

Variety	Tons cane per acre						Z. H. R. Brix				
	Spring Hall	Kingsland	Foursquare	Carrington	Colleton	Blackmans	Spring Hall	Kingsland	Foursquare	Carrington	Colleton
B.37161 ..	21.73	25.70	24.97	25.06	31.39	28.15	21.9	21.1	20.2	21.4	20.2
B.4098 ..	20.84	26.89	22.13	24.42	36.99	30.61	22.4	22.3	21.5	23.4	21.8
B.4362 ..	18.72	26.80	27.63	25.50	32.88	29.76	23.2	23.1	20.4	23.1	22.3
B.43337 ..	25.77	32.17	27.70	27.65	38.68	35.26	19.8	20.3	20.5	20.6	20.4
B.43391 ..	24.91	26.38	29.69	25.09	42.25	42.01	21.2	20.8	19.2	21.3	20.6

BLE XII

g Trials—B.43′ Series

	% Sucrose in juice						Rotten canes per plot					
Blackmans	Spring Hall	Kingsland	Foursquare	Carrington	Colleton	Blackmans	Spring Hall	Kingsland	Foursquare	Carrington	Colleton	Blackmans
21.8	17.2	16.9	15.2	18.2	16.2	17.8	3	2	6	4	16	13
22.8	20.1	18.0	17.0	19.3	15.9	19.1	4	2	4	2	11	16
24.6	20.2	19.3	18.9	19.4	18.0	20.7	16	6	7	11	21	9
21.8	17.2	17.3	16.6	17.2	15.5	18.2	2	2	6	3	13	8
22.2	17.4	17.5	16.3	17.4	16.1	18.3	6	5	3	1	12	10

The Seedling B.4362 is derived from the cross B.37161 x P.O.J.2878. It is a long green cane of medium thickness, which trashes well and has a very good juice. The yield of cane is not as good as that of the other varieties, but it may be expected to perform better in more normal years. It has the disadvantage of arrowing freely, particularly in the high rainfall areas.

The Seedling B.43337 is derived from the cross B.35247 x B.3337. It is a reddish brown cane with prominent nodes and the rind is inclined to split and has rough patches on it. Its juice is in much the same class as that of B.37161, while it gives a very heavy yield of cane, particularly in the low and intermediate rainfall areas. It trashes fairly well, but has the disadvantage of arrowing very freely, particularly in the high rainfall red soil areas.

The Seedling B.43391 is derived from the cross B.35247 x B.3337. It is a red cane of medium width, very much like B.34104, but without the rough brown splashes on the rind displayed by the latter. It trashes easily and arrowing is sparse, even in the high rainfall red soil areas. Its juice is in much the same class as that of B.37161 but it appears to be capable of giving very much heavier yields of cane.

All of these varieties germinate very readily; B.43337 and B.43391 cover in early and rapidly. B.4362 resembles its parent B.37161 very much in habit, and will probably perform much better in years of normal rainfall.

Two other seedlings of this series which are worthy of mention are B.43229 and B.43235. The former has an exceptionally good juice, while the latter is a thick red cane which drops its trash exceptionally well. Both of these seedlings are derived from the cross B.3365 x B.34104 and much was expected of B.43235 which performed exceedingly well as plants and ratoons in the Second Year Seedling Trials.

PROGRESS WITH SEEDLINGS OF THE B.42′ SERIES

Only three of the seedlings of this series were considered worthy of trial. One of these was included in the Select Seedling Trials reaped in 1946, but was hopelessly outclassed. The other two seedlings germinated so poorly that it was impossible to include them in these trials. These were multiplied and included in the Third Year Seedling Trials along with the B.43′ Series. Here again they proved to be poor germinators and will not be tested further.

PROGRESS WITH SEEDLINGS OF THE B.41′ AND EARLIER SERIES

A. The Seedlings Tested

Select Seedling Trials

Plant Canes	.. ..	B.34104, B.37161, B.4098, B.40105, B.41211 and B.41227.
First Ratoons	.. ..	B.34104, B.37161, B.4098, B.41211, B.41227.
Second Ratoons	..	B.37161, B.41211 and B.41227.

B. An Ecological Classification of the Trials

Turner's Classification

This classification was proposed by Turner after a study of the sugar cane soils of the British West Indian Colonies, and is as follows :—

Group I. Soils with a natural tilth and free natural drainage which require neither to be ploughed nor drained.

Group II. Soils with a tilth that can be improved by ploughing, but which do not require to be drained.

(a) Low Rainfall Areas.

Select Seedling Trials

Plant Canes .. .. Six Mens, Mangrove and Golden Grove.

(b) Intermediate Rainfall Areas.

Select Seedling Trials

Plant Canes .. .. Waterford and Ridge.
1st Ratoons .. .. Portland.
2nd Ratoons .. .. Alleynedale.

(c) High Rainfall Areas.

Select Seedling Trials

Plant Canes .. .. Lancaster and Mt. Wilton.
1st Ratoons .. .. Andrews.

Group III. Soils which require to be drained, but are preferably left unploughed.

Group IV. Soils of poor natural tilth in which a tilth can be created by ploughing, but which require to be drained to maintain their tilth.

(b) Intermediate Rainfall Areas.

Select Seedling Trials

Plant Canes .. .. Bulkeley.

TABLE XIII

C. RAINFALL DURING THE SEASONS

Month	1925-26 to 1944-45	1945-46	1946-47
January ..	3.17	0.84	4.03
February ..	1.59	1.28	2.12
March ..	1.69	0.59	0.78
April	1.83	4.96	3.60
May	2.36	6.37	3.42
June	4.37	5.33	3.41
July	6.45	5.38	5.30
August	6.30	10.29	5.65
September ..	7.45	7.62	5.91
October ..	8.33	4.57	2.77
November ..	10.08	6.89	3.89
December ..	4.26	2.55	5.77
January ..	3.09	4.03	3.66
February ..	1.57	2.12	1.39
March	1.66	0.78	0.66
Totals ..	64.25	63.60	52.36

It will be noted that the rainfall during the season was very much below normal, and this is reflected in the cane yields of the various trials. A very dry spell from September to the end of November, followed by reasonable rains dur-

ing the month of December, probably caused juice quality to be poorer than normal.

Group II(a) Golden Grove and Mangrove—Plant Cane

TABLE XIV

Select Seedling Trials—Plant Canes

Estates and Dates of Harvesting :— Mangrove, 13th March, 1947; Golden Grove, 12th March, 1947.

Figures represent the mean of five plots of forty cane holes each

Variety	Tons cane per acre		Tons sugar per acre		% sucrose in cane		Quotient of purity		No. rotten ca per plot	
	Mangrove	Golden Grove	Mangrove	Golden Grove	Mangrove	Golden Grove	Mangrove	Golden Grove	Mangrove	Golde Grov
B.37161 ..	21.80	23.93	3.40	3.24	15.6	13.5	92.4	86.3	12	1
B.4098 ..	21.38	24.48	3.38	3.70	15.8	15.0	86.2	85.6	16	1
B.40105 ..	21.92	30.33	3.49	4.44	15.9	14.6	88.7	85.9	10	1
B.41211 ..	26.22	28.88	4.15	4.20	15.8	14.5	88.9	85.0	9	
B.41227 ..	17.01	23.09	2.75	3.50	16.2	15.1	88.4	85.7	50	2

The following differences between mean yields may be considered significant at P = 0.15 Mangrove ± 0.41 tons sugar per acre and ± 2.44 tons cane.

Golden Grove — Results are insignificant.

TABLE XV

Select Seedling Trials — Plant Canes

Six Mens — Harvested :— 11th March, 1947

Figures represent the mean of four plots of 40 cane holes each

Variety	Tons Cane per Acre	Tons Sugar per Acre	% Sucrose in Cane	Quotient of Purity	No. Rotten Canes per Plot
B.37161 ..	25.02	3.76	15.1	89.8	9
B.4098	27.40	4.50	16.4	88.4	11
B.41211 ..	33.51	5.02	15.0	86.9	12
B.41227 ..	27.11	4.36	16.1	88.8	14

The following differences between mean yields may be considered significant at P = 0.05 ± 0.60 tons sugar per acre and ± 2.92 tons cane per acre.

The trial at Golden Grove was far from being ideal as the variation in yield from block to block was excessive. The differences between mean yields was highly insignificant, and no useful purpose can be served by considering the results. The trial at Mangrove on the other hand proved to be very good and the results were highly significant. B.41211 was the outstanding cane in this category, outyielding the standard varieties B.37161 and B.4098 by approxim-

ately 4.5 tons of cane and 0.75 tons of sugar to the acre. B.41227 gave the lowest yield, and was beaten significantly on cane and sugar by B.37161, B.4098 and B.40105. There was little to choose between the juice qualities of B.37161, B.4098, B.40105 and B.41211. The juice of B.41227 was higher in sucrose than any of the other varieties tested.

At Six Mens, B.41211 again gave the highest yields of cane and sugar and B.37161 the lowest. There was nothing to choose between the yields of B.4098 and B.41227. B.4098 was richest in sucrose, closely followed by B.41227. There was little to choose between the juice qualities of B.37161 and B.41211.

Group II(b) Waterford and Ridge—Plant Canes

TABLE XVI

Select Seedling Trials — Plant Canes

Dates of Harvesting :—

Waterford — 27th March, 1947

Ridge — 26th March, 1947

Figures represent the mean of four plots of 40 cane holes each, except in the case of Waterford, where the trial was burnt and one block was reaped in error by the estate labour.

Variety	Tons cane per acre		Tons sugar per acre		% Sucrose in cane		Quotient of purity		No. of rotten canes per plot	
	Waterford	Ridge	Waterford	Ridge	Waterford	Ridge	Waterford	Ridge	Waterford	Ridge
B.37161 ..	40.33	27.32	6.20	4.05	15.4	14.9	88.7	90.0	14	8
B.4098 ..	43.47	33.02	7.16	5.71	16.5	17.3	86.8	88.3	11	11
B.41211 ..	43.89	34.26	6.71	5.67	15.3	16.4	84.7	88.6	14	24
B.41227 ..	43.90	32.19	7.17	5.43	16.3	16.9	87.6	88.3	6	13

The following differences between mean yields may be considered significant :—

Waterford — Insignificant.

Ridge ± 0.33 tons sugar and ± 3.68 tons cane per acre.

The trial at Waterford was unfortunately burnt, and one block was reaped in error by the plantation labour. There was little to choose between the cane yields of B.4098, B.41211 and B.41227. However, both B.4098 and B.41227 gave nearly half a ton more sugar per acre than B.41211, and nearly one ton more than B.37161. It was not possible however to show that any of these differences were statistically significant. There was little to choose between the sucrose content of B.4098 and B.41227, while the sucrose contents of B.37161 and B.41211 were also similar.

In the trial at Ridge, B.41211 gave the highest and B.37161 the lowest yield of cane, while B.4098 gave the highest and B.37161 the lowest yield of sugar. There was little to choose between the cane yields of B.4098, B.41211 and B.41227. B.4098 was richest in sucrose, closely followed by B.41227.

Portland — 1st Ratoons.

TABLE XVII

Select Seedling Trials — 1st Ratoons

Portland — Harvested:— 16th April 1947

Variety	Tons Cane per Acre	Z.H.R. Brix	No. of Rotten Canes per Plot
B.37161 ..	35.57	22.9	8
B.4098 ..	32.29	23.5	13
B.41211 ..	36.07	22.6	20
B.41227 ..	34.55	23.0	42

Differences between mean yields of this trial are insignificant.

In this trial, B.41211 gave the highest yield of cane, closely followed by B.37161 and B.41227. B.4098 gave the lowest yield. The differences between the mean yields however cannot be established to be significantly different. B.4098 gave the juice of best quality as revealed by the Zeiss Hand Refractometer. There was little to choose between the juice qualities of B.37161 and B.41227.

Alleynedale — 2nd Ratoons

TABLE XVIII

Select Seedling Trials — 2nd Ratoons

Alleynedale — Harvested:— 28th March, 1947

Variety	Tons Cane per Acre	Z.H.R. Brix	No. of Rotten Canes per Plot
	Group I		
B.37161 ..	21.62	22.9	6
B.41211 ..	22.98	22.2	27
	Group II		
B.37161 ..	23.68	22.2	6
B.41227 ..	28.14	22.5	17

The following differences between mean yields may be considered insignificant at P = 0.05.

Group I — Insignificant.

Group II — ± 3.65 tons sugar per acre.

In Group I, B.41211 slightly outyielded B.37161 on second ratoon cane, while B.37161 had the better juice.

In Group II, B.41227 significantly outyielded B.37161 by an average of 4.5 tons of second ratoon cane per acre, and in addition had juice of better quality.

Group II(c)

(i) Lancaster and Mount Wilton — Plant Canes.

TABLE XIX

Select Seedling Trials — Plant Canes

Estates and Dates of Harvesting :—

Lancaster — 8th March 1947
Mount Wilton — 15th April 1947

Figures represent the means of five plots of 40 cane holes each.

Variety	Tons Cane per Acre		Tons Sugar per Acre		% Sucrose in Cane		Quotient of Purity		No. of Rotten Canes per Plot	
	Mount Wilton	Lancaster	Mount Wilton	Lancaster	Mount Wilton	Lancaster	Mount Wilton	Lancaster	Mount Wilton	Lancaster
B.34104*	27.54	22.51	4.27	2.77	15.5	12.3	88.3	87.5	90	116
B.37161 ..	31.57	33.73	4.52	4.33	14.3	12.8	88.0	88.7	58	37
B.4098 ..	29.10	36.80	4.13	5.29	14.2	14.3	84.7	86.5	38	7
B.41211*	35.13	32.85	5.37	4.37	15.3	13.3	87.8	86.2	49	69
B.41227 ..	32.95	36.55	4.58	5.20	13.9	14.2	83.2	85.6	174	9

*Plots were damaged by rats at Lancaster.

The following differences between mean yields may be considered significant at P = 0.05.

Lancaster ± 0.98 tons sugar per acre ± 5.03 tons cane per acre.
Mount Wilton — Insignificant.

The trial at Lancaster was unfortunately burnt, and had to be reaped rather early in crop, so that the juices were not as good as they might have been. In this trial B.4098 gave the heaviest yield of cane, closely followed by B.41227. B.37161 and B.41211 gave approximately three tons and B.34104, nine tons of cane per acre less than the two former varieties. However, both B.41211 and B.34104 had been severely damaged by rats. On sugar yield, B.4098 and B.41227 outyielded B.37161 and B.41211 by nearly one ton per acre, and B.34104 by nearly 2.5 tons per acre. B.4098 and B.41227 gave cane of the highest quality, and there was little to choose between these varieties. The juice of B.41211 was better than that of B.37161, which in turn was better than that of B.34104. At Mount Wilton, B.41211 gave the heaviest yield of cane, and B.34104 the lowest. The differences between mean yields were, however, not significant. On sugar, B.41211 gave the heaviest yield and B.4098 the lowest. Here again the difference between mean yields cannot be shown to be significant. B.34104 and B.41211 gave cane of the highest quality, and B.41227 cane of the lowest quality. There was little to choose between B.37161 and B.4098 as far as cane quality is concerned.

(ii) Andrews — 1st Ratoons

TABLE XX

Select Seedling Trials — First Ratoons

Andrews — Harvested 23rd April 1947

Variety	Tons Cane per Acre	Z.H.R. Brix	No. of Rotten Canes per Plot
B.34104 ..	33.73	22.5	93
B.37161 ..	41.14	23.0	29
B.4098 ..	35.38	22.6	74
B.41211 ..	25.73	22.8	159
B.41227 ..	44.94	21.8	69

N.B : The variety B.41211 was severely damaged by rats. A difference of 4.90 tons cane per acre between mean yields may be considered significant.

In this trial, B.41227 gave the heaviest yield of ratoon cane, followed by B.37161. Both of these varieties were significantly better than B.34104, B.4098 and B.41211. B.41211 was very severely damaged by rats in this trial, an average of 159 rotten and rat eaten canes having been picked up per plot. B.37161 gave juice of the highest and B.41227 juice of the lowest quality. There was little to choose between the juices of B.34104, B.4098 and B.41211.

Group IV (b) Bulkeley—Plant Cane

TABLE XXI

Select Seedling Trials—Plant Canes

Bulkeley — Harvested:—1st April, 1947

Figures represent the means of four plots of forty cane holes each.

Variety	Tons Cane per Acre	Tons Sugar per Acre	% Sucrose in Cane	Quotient of Purity	No. Rotten Canes per Plot
B.37161 ..	41.81	6.57	15.7	88.0	12
B.4098 ..	44.97	7.05	15.7	84.1	12
B.41211 ..	44.65	6.94	15.5	84.0	15
B.41227 ..	42.85	7.04	16.4	85.7	23

The differences between mean yields of this trial are insignificant.

In this trial, B.4098 gave the largest, and B.37161 the smallest yield of cane. The differences however failed to be significant. On sugar, B.4098 gave the heaviest yield, very closely followed by B.41227 and B.41211. B.41227 gave cane of the best quality. There was little to choose between the cane quality of the other three varieties.

SUMMARY AND CONCLUSIONS

In the low and intermediate rainfall black soil areas, the variety B.41211 has, in the absence of rat damage, given the heaviest yields of cane and sugar. This is closely followed in the intermediate rainfall areas by B.4098.

In the red soil, intermediate rainfall areas, B.41211, B.41227, B.4098 and B.37161 have all proved to be good. B.4098 and B.41227 have better juices as a general rule than B.37161 and B.41211.

In the high rainfall red soil areas, B.41227 has done very well indeed, particularly as a ratoon crop. B.41211 would also have done well, but invariably the yield has been adversely affected by rat damage which can be very severe in relatively small plots. B.4098 appears to arrow very freely in this category and is never at its best. In spite of this it has given some very good yields.

It is proposed to distribute planting material of B.41211 and B.41227 during the coming planting season so that these varieties can be tried on a plantation scale and in order that the factories may be able to obtain experience with their milling qualities.

III. DESPATCH OF SEEDLINGS TO THE PLANT QUARANTINE STATION

During November 1946, cuttings of twenty-nine varieties of the B.44 Series were sent to the Plant Quarantine Station. These are listed below, together with recommendations for their distribution :—

Seedling	Parentage	Colonies to which to be sent.
B.4408 ..	B.3172 x B.34104	All Colonies.
B.4409 ..	B.3353 x B.34104	" "
B.4425 ..	B.3354 x B.37175	" "
B.4466 ..	B.37161 x B.3337	" "
B.4467 ..	" x "	" "
B.44109 ..	B.40272 x Co.290	" "
B.44111 ..	" x "	" "
B.44113 ..	" x "	" "
B.44165 ..	B.3354 x B.34104	" "
B.44167 ..	B.3354 x B.35245	" "
B.44177 ..	B.3354 x B.37175	" "
B.44182 ..	B.3354 x B.38270	" "
B.44244 ..	B.35207 x B.34104	" "
B.44254 ..	B.35207 x P.O.J.2878	" "
B.44269 ..	B.37161 x B.3337	" "
B.44278 ..	" x "	" "
B.44279 ..	" x "	" "
B.44305 ..	B.40272 x Co.290	" "
B.44341 ..	" x "	" "
B.4410 ..	B.3353 x B.34104	T'dad, Jamaica, Antigua & Br. Guiana
B.4411 ..	" x "	" " " " "
B.4448 ..	B.3439 x Co.290	" " " " "
B.4485 ..	B.37161 x B.3337	" " " " "
B.44248 ..	B.35207 x P.O.J.2878	" " " " "
B.44270 ..	B.37161 x B.3337	" " " " "
B.4487 ..	" x "	Jamaica & British Guiana only.
B.4491 ..	" x "	" " " "
B.44101 ..	B.37161 x P.O.J.2878	" " " "
B.44150 ..	B.3353 x B.34104	" " " "

As a result of the ratoon data obtained from the Second Year Seedling Trial at the high rainfall Station Todds, it was decided to discard seven varieties on their ratoon performances, and the Secretary of the Plant Quarantine Station was instructed accordingly. The varieties discarded were: B.4467, B.44101, B.44100, B.44113, B.44167, B.44177, B.44305.

IV. PERFORMANCES OF SEEDLINGS IN CONTRIBUTING COLONIES

BARBADOS

During the past two seasons, only three varieties have been recommended for planting in Barbados. B.37161 has been recommended in all categories from 95% in the low rainfall areas to 50% in the Scotland district. B.4098 was also recommended for planting in all ecological categories from 5% in the low rainfall areas, to 30% in the high rainfall and Scotland districts. B.34104 was recommended in two categories only, viz., high rainfall areas 10% and Scotland areas 20%.

The variety acreage figures for the 1947 crop are given in the table below:—

Variety	Percentage of total acreage.
B.37161	83.83
B.4098	3.00
B.35187	3.25
B.34104	3.83
B.H.10(12) ..	2.49
B.3439	0.54
B.726	1.26
B.2935	0.26
Mixed and Others ..	1.54
Total	100.00

This table shows that B.37161 is still by far the most popular variety in Barbados, occupying nearly 84% of the area reaped during the past crop. This is an advance of approximately 9.5% on the 1946 crop. B.37161 is certainly a good cane for Barbados conditions, but cannot be said to be ideal, as it tends to hold on to its trash too firmly. However, it has served the Barbados planter well, and unless a very much superior cane is produced, it is likely to continue in cultivation for many years to come.

The area under B.4098 has increased by approximately 1.5% over the 1946 crop, and is likely to increase still further, particularly in the intermediate rainfall areas. This cane trashes much more easily than B.37161 and, in addition, has a much better juice. However, it tends to arrow heavily.

The increase in the above-mentioned varieties has taken place mainly at the expense of B.34104, B.35187, B.3439, B.H.10(12) and B.726.

TRINIDAD

The variety acreage figures for 1946 crop show that B.34104 and B.3337 have continued to expand, chiefly at the expense of B.H.10(12) and Co.213.

B.34104 is now the dominant variety in Trinidad, occupying nearly 38% of the total area reaped in the 1946 crop. B.3337 occupied 10.5% of the total acreage for this crop. B.37161 and B.37172 both appear in the table for the first time in the 1946 crop, with 1.33% and 1.24% respectively.

It has recently been reported that B.37161 has shown some resistance to froghopper damage, as also did B.37193. Both of these varieties are from the same cross, B.37161 x B.603. This cross was repeated during the past season, but unfortunately only four seedlings were obtained.

From the experiments reaped in 1947, it appears that no general conclusions can be drawn. B.34104, B.3337, B.37161 and B.37172 are usually at the head of the test, but the order in which they appear varies widely from trial to trial. The planting recommendations for the 1946-48 crop are therefore likely to remain as they are for the 1947-49 crop. These recommendations are as follows:—

"The varieties B.3337 and B.34104 are already in extensive cultivation. "When planted early in the wet season on light soils of the flat areas with "fairly uniform texture down the profile, B.34104 can give excellent yields. "When planted towards the end of the wet season however, this variety "usually suffers severely from drought in the dry season following plant-"ing. B.37172 could profitably be used for this late planting. This variety "has a strong tendency to uproot. How this will affect its yield as ratoons "on a commercial scale is not yet definitely known, and it is suggested "that planting of this variety should be confined, if possible, to loams "with a fairly uniform texture down the profile, and on clay soils with "structure.

"B.37161 could profitably be widely extended in the Naparimas and "possibly on structureless heavy clays of the flat areas. There have "been conflicting reports of the juice qualities of B.3337. So far it seems "well suited to light soils with a distinct shortage of moisture during the "dry season, provided it is planted early in the wet season.

"The variety B.37193 should be extended to a small extent in bad "froghopper areas, in order to ascertain its resistance to and recovery from "froghopper blight".

The variety B.4098 was planted in trials for the first time in October 1946, so that plant cane results of this variety will be available during the 1948 crop.

ANTIGUA

In Antigua during the 1946 crop, the variety B.4098 was reaped for the first time in formal trials. It was included in nine trials scattered over the main soil types of the island. In eight of these trials it beat all other varieties both on yield of cane and sugar, and very often by wide margins. In the ninth trial it was beaten on cane by B.40102, B.40105 and B.37161, but with B.37161 gave the heaviest yield of sugar.

The results of the plant cane trials reaped in 1947 tell a similar story. In eight plant cane trials it gave the heaviest yield of cane in seven, and was beaten by B.41227 in one trial. On sugar yield it was top in six trials, being beaten by B.37172 in one trial and by B.37161, B.37172 and B.41227 in the other trial. In no case, however, were the differences very large.

In the nine first ratoon trials B.4098 was first in cane yield in seven trials, being beaten by B.37161 by 0.1 and 0.2 tons of cane. On sugar yield it was

top in seven trials, being beaten by B.34104 by 0.01 and 0.04 tons of sugar per acre.

Taking everything into consideration, the performance of this variety in Antigua has been very gratifying, and it is probable that it will become a standard cane in a short time.

Other varieties which performed well in the trials were B.34104, B.37161, B.37172 and B.41227. The latter is a cane which appears to be at its best under fairly moist conditions which are not conducive to heavy arrowing, and as the past year was one of severe drought, it may be expected to do better in more normal years. B.41211 was disappointing, as it has performed very well under Barbados conditions, particularly in the dry areas.

Planting recommendations of the Sugar Agronomist for the 1946-48 crop are as follows:—

Soil Type.	Percentage of Total Area.		
	B.34104	B.37161	B.37172
Wetherell Clay	100	—	—
Fitches Clay	—	100	—
W. F. Transition	—	100	—
Lighter Soils of Blubber Valley Series	30	30	40
Gunthorpe Clay	30	60	10
Tomlinson Clay	20	60	20
Lindsey Clay	—	90	10
Otto Clay	25	50	25
Bendal Clay	25	25	50
Heavier Soils of the Blubber Valley Series ..	30	30	40

The varieties reaped during the 1946 crop together with the percentage of the total area occupied by each, are given in the table below:—

Variety	Percentage of Total Cane Area.
B.34104	45.91
B.37161	17.70
B.3439	32.13
B.37172	0.31
B.39177	0.07
B.4098	0.06
Others	3.82
	100.00

ST. KITTS

The results of the trials in St. Kitts during the past year show that no variety can be said to be outstanding in all areas, with the possible exception of B.37161. A feature of the trials which is worth mentioning is that B.37161 appears to have a sugar content as high as or higher than B.34104, B.3439, B.4098 and B.40105. This is just the reverse of our experience in Barbados. B.4098 has done fairly well as a plant cane in the lower lands generally, but probably

arrows too heavily to be outstanding in most of the middle and upper lands. B.41211 was top in the single plant cane trial in which it was included.

As far as the ratoon trials are concerned, the most outstanding feature was the exceptionally good performance of B.40105. This variety performed exceptionally well in Barbados as a plant cane, but could not be induced to ratoon satisfactorily. The variety unfortunately arrows heavily, and this factor undoubtedly limits its yields. In Barbados the sucrose content of the juice of B.40105 is appreciably higher than that of B.37161. However, in St. Kitts, the sucrose content of the juice appears to be variable, and at times much poorer than that of B.37161.

B.3337 gave some good yields of plant and ratoon cane, but the juice quality is so consistently poor that it can definitely be recommended that the variety be discarded.

B.37161 appears to be still the most consistent of the varieties tried in all categories. It occupied nearly 57% of the area reaped in the 1946 crop, and this will probably increase.

The planting recommendations of the Sugar Agronomist for the 1946-48 crop are as follows:—

Drier Lower Lands: Until further information is available with respect to the newer varieties, it is recommended that B.3439 should be grown on those areas of the drier lower lands which are to be reaped both as plants and ratoons during the first month of the crop season. B.37161 should be planted for reaping during the remaining months of the crop season. B.37161 should also be planted in all areas where B.3439 is known to uproot, whether reaping is to be early or late.

Lower Lands of Intermediate Rainfall: Until further information is available, the lower lands of intermediate rainfall should be planted mainly in B.37161. As the middle lands are approached, this variety should be replaced to some extent by B.34104.

Middle Lands of Intermediate Rainfall: Until further information is available, it is recommended that the middle lands of intermediate rainfall should be planted mainly in B.37161. Some B.34104 should be planted in areas with a deep top soil, where arrowing is least likely to limit cane growth. Some B.35187 may also be planted in this area.

Wetter Middle Lands: It is recommended that the wetter middle lands should be planted mainly in B.37161. Some B.34104 might be planted in areas with a deep top soil where arrowing is least likely to limit cane growth. Small areas might also be planted with B.38212.

Drier Upper Lands: Until further information is available, B.37161 should be planted as the main crop. Some B.34104 might be planted on fields with a deep top soil where arrowing is least likely to limit cane growth.

Wetter Upper Lands: Until further information is available, both B.37161 and B.34104 should be planted on the wetter upper lands. The planting of B.35187 is not to be recommended except on a very small scale.

JAMAICA

In an extensive series of trials reaped during the 1947 crop season, 71 varieties were tested, all but nine of which were varieties produced by the Station. Of the varieties tested, the most outstanding were B.3439, B.34104, B.37161,

B.37172 and B.4098. B.37193 also gave some heavy yields, but unless this variety is cut at the right time, the juice quality is likely to be poor.

B.3439 and B.34104 are both well established commercial varieties in Jamaica, the latter having occupied 40% of the acreage reaped during the 1947 crop. It is very susceptible to a mild form of mosaic, but this does not appear to have affected its yield to any extent. B.3439 is highly resistant to mosaic in Jamaica, and possesses an excellent juice, which makes it suitable for early reaping. B.37161 has performed well in the trials, but appears to be no better than B.34104. It is more resistant to mosaic than B.34104, and also shows a high degree of tolerance. B.37172 is resistant to mosaic, but generally speaking has not performed as well as the above mentioned varieties, except in the eastern part of the Island, where it occupies approximately 50% of the cultivation of one estate, and has given excellent returns.

B.4098 has not been so thoroughly tested as the others, but has performed exceptionally well in those trials in which it has been included. It is highly susceptible to mosaic disease, and will probably not be cultivated on a commercial scale for this reason.

The remainder of the B.40′ and B.41′ Series have not been thoroughly tested, but the following appear to have possibilities:— B.40102, B.40105, B.40112. B.40114, B.4137, B.41211, B.41227 and B.41228.

The variety acreage figures for the 1947 crop season are given in the table below :—

Varieties percent. total acreage.

Variety.	1947.
B.3439	18
B.34104	40
B.37161	1
B.37172	3
B.H.10(12)	12
E.K.28	—
F.C.916	1
M.28	2
P.O.J.2727	1
P.O.J.2878	9
Others (Mixed) ..	13

BRITISH GUIANA

There are at present a large number of varieties in British Guiana undergoing multiplication or in the early stages of testing. However, the only one which can be said to have been tested thoroughly is B.34104. This variety has performed exceptionally well in most districts, and is now being widely planted on a commercial scale. The juice quality under British Guiana conditions has not been as good as was hoped, but is better than that of Co.421, but not as good as that of D.14/34. its principal competitors.

V. MOSAIC DISEASE INVESTIGATIONS

The seedlings of the B.44′ Series were tested for resistance to mosaic disease by artificial inoculation. The weather was very dry at the time of inoculation, and only two varieties showed the symptoms of the disease.

Plants of Ba.11569 inoculated at the same time showed a very poor take, while plants of B.37161 failed to show any symptoms at all. This tended to confirm the opinion that the weather conditions at the time of, and subsequent to inoculation have a great effect on the expression of the symptoms.

Plants of Ba.11569 were placed in the laboratory and subjected to high temperature and humidity conditions by keeping the floors wet and by raising the temperature with a primus stove, while an electric fan was used to maintain circulation of the air in the closed building. The results of this trial are given in the table below:—

Temperature of Inoculation	No. of Plants Inoculated.	No. Showing Symptoms at 12 weeks.	% Showing Symptoms.
30° C.	50	9	18
31° C.	9	1	11
32° C.	9	3	33
33° C.	9	5	56
35° C.	9	2	22
36° C.	9	1	11

From this trial it would appear that temperature at the time of inoculation does have a bearing on the take obtained. However, the experiment will have to be repeated before any conclusions can be drawn, as the numbers involved are very small.

VI. STATEMENT OF EXPENDITURE FOR 1946—47

1.	Personal Emoluments	£1,876	6	10
2.	Provident Fund	55	0	0
3.	Seedling Trials	2,350	0	0
4.	Stationery and Library	50	0	0
5.	Travelling	550	0	0
6.	Incidentals	34	19	2
7.	Capital	600	0	0
	Total	£5,516	6	0

APPENDIX I.

B.49' and B.s.48' Series.

List of Crosses Made in 1946.

Cross	Derivation	No. Germinated	No. Potted	No. Plant in Fi nurse and/ First Y Tria
B.3439 x B.37254 ..	*S. officinarum x S. spontaneum*	117	117	1
B.44130 x Ba.6032 ..	3rd nobilisation Local	300	300	2
B.3439 x B.(30)L7 ..	2nd „ Glagah	4,000	300	2
B.3439 x B.39250 ..	4th „ „	140	136	1
	2nd „ Dacca	370	360	3
Ba.11569 x B.45181 ..	Noble x Glagah x Local	—	—	
B.39211 x B.40123 ..	„ x „ x „	320	320	2
B.35247 x B.3337 ..	Noble x Glagah x Celebes ..	520	520	3
B.35197 x B.38279 ..	Noble x Glagah x Local x Celebes	475	400	3
B.35247 x B.38279 ..	Noble x Glagah x Local x Celebes			
		6,242	2,453	2,0
	S. officinarum x S. spontaneum x S. barberi			
B.35207 x B.34104 ..	Noble x Local x Chunnee ..	1,060	1,060	9
B.39207 x B.41211 ..	„ x „ x „ ..	200	200	1
B.3365 x B.34104 ..	„ x „ x „ ..	1,075	1,000	8
B.37161 x B.34104 ..	„ x „ x „ ..	290	290	2
B.35218 x B.4098 ..	„ x „ x „ ..	196	196	1
B.40105 x B.37193 ..	„ x „ x „ ..	360	350	3
B.45115 x B.41261 ..	„ x „ x „ ..	—	—	
B.37161 x B.4098 ..	„ x „ x „ ..	90	75	
B.42279 x B.37193 ..	„ x „ x „ ..	428	250	2
B.4092 x B.37193 ..	„ x „ x „ ..	54	53	
B.3439 x Co.290 ..	„ x „ x „ ..	450	445	4
B.37161 x Co.290 ..	„ x „ x „ ..	254	231	2
B.34102 x B.37193 ..	Noble x Glagah x Chunnee ..	650	640	5
B.37161 x B.3337 ..	„ x „ x „ ..	410	300	2
B.37266 x B.37193 ..	„ x „ x „ ..	540	400	3
B.37161 x P.O.J.2878	„ x „ x „ ..	490	435	4
B.35206 x P.O.J.2878	„ x „ x „ ..	170	170	1
B.41277 x B.37193 ..	„ x „ x „ ..	650	300	2
B.3439 x B.37175 ..	„ x „ x „ ..	311	297	2
B.37161 x B.4327 ..	„ x „ x „ ..	47	47	
B.45182 x B.34104 ..	Noble x Glagah x Local x Chunnee	1,040	300	
Co.421 x B.45301 ..	„ x „ x „ ..	5,180	480	
Co.421 x B.45237 ..	„ x „ x „ ..	4,990	500	
M.D.47 x B.45105 ..	„ x „ x „ ..	126	126	
B.38233 x B.34104 ..	„ x „ x „ ..	1,712	1,500	1,

APPENDIX I—*Continued*

Cross	Derivation	No. Germinated.	No. Potted.	No. Planted in Field Nursery and or First Year Trial
B.34117 x B.43261 ..	Noble x Glagah x Local x Chunnee	1,640	300	260
B.38203 x B.34104 ..	„ x „ x „ x „	565	495	490
B.39211 x B.45304 ..	„ x „ x „ x „	58	46	46
B.39207 x Co.419 ..	„ x „ x „ x „	—	—	—
B.35207 x B.40255 ..	„ x „ x „ x „	50	50	50
B.4110 x B.37256 ..	„ x „ x „ x „	8	—	—
B.37266 x B.34104 ..	„ x „ x „ x „	660	400	376
B.45102 x B.41242 ..	„ x „ x „ x „	480	300	203
B.35218 x P.O.J.2878	„ x „ x „ x „	61	52	52
B.34102 x B.34104 ..	„ x „ x „ x „	429	240	213
B.34102 x B.4098 ..	„ x „ x „ x „	710	710	710
B.37161 x B.38281 ..	„ x „ x „ x „	—	—	—
B.45197 x B.39257 ..	„ x „ x „ x „	—	—	—
B.4110 x B.4098 ..	„ x „ x „ x „	—	—	—
P.O.J.2364 x B.4098	„ x „ x „ x „	9	—	—
M.D.47 x B.4098 ..	„ x „ x „ x „	44	38	38
B.38233 x B.4098 ..	„ x „ x „ x „	29	28	25
B.38272 x B.4098 ..	„ x „ x „ x „	272	195	190
B.45121 x B(30)L7 ..	„ x „ x „ x „	420	180	156
B.45166 x B.3337 ..	„ x „ x „ x „	24	24	14
B.40116 x B.(30)L7 ..	„ x „ x „ x „	—	—	—
B.38203 x B.39156 ..	Noble x Glagah x Celebes x Chunnee	640	375	336
B.41586 x B.39156 ..	„ x „ x „ x „	35	35	33
B.39157 x B.45184 ..	„ x „ x „ x „	525	350	300
B.35247 x B.4306 ..	„ x „ x „ x „	530	380	377
B.43349 x B.37193 ..	„ x „ x „ x „	300	200	160
B.35247 x B.45283 ..	„ x „ x „ x „	15	15	15
B.43253 x B.39274 ..	„ x „ x „ x „	784	500	448
B.37161 x B.43346 ..	„ x „ x „ x „	386	250	213
B.37161 x B.45314 ..	„ x „ x „ x „	63	63	62
B.37161 x B.43337 ..	„ x „ x „ x „	15	15	11
B.35197 x B.34104 ..	Noble x Local x Celebes x Chunnee	595	550	514
B.35247 x B.34104 ..	„ x „ x „ x „	1,690	1,300	1,079
B.35197 x Co.281 ..	„ x „ x „ x „	700	400	—
B.35247 x Co.281 ..	„ x „ x „ x „	283	200	179
B.35197 x B.39178 ..	„ x „ x „ x „	372	250	230
B.37227 x B.4098 ..	„ x „ x „ x „	600	400	380
B.35197 x B.45236 ..	„ x „ x „ x „	115	100	97
B.35247 x B.4098 ..	„ x „ x „ x „	150	150	146
B.43283 x B.41227 ..	Noble x Glagah x Local x Celebes x Chunnee	360	350	342
B.43295 x B.34104 ..	Noble x Glagah x Local x Celebes x Chunnee	—	—	—
B.35247 x B.43214 ..	Noble x Glagah x Local x Celebes x Chunnee	540	400	372
		34,930	18,986	16,790

APPENDIX I.—*Continued*

Cross	Derivation	No. Germinated	No. Potted	No. Planted in Field Nursery and/or First Year Trial
	S. officinarum x S. barberi			
B.3365 x B.603 ..	3rd Nobilisation Chunnee ..	4	—	—
	S. officinarum x S. spontaneum x S. robustum			
B.4457 x P.O.J.2878	Noble x Glagah x Robustum ..	116	100	68
B.4587 x P.O.J.2878	„ x „ x „ ..	—	—	—
		116	100	68
	S. officinarum x S. barberi x S. robustum			
B.37161 x B.4452 ..	Noble x Chunnee x Robustum ..	13	13	13
	S. officinarum x S. spontaneum x S. barberi x S. robustum.			
B.38233 x 32MQ.629	Noble x Glagah x Chunnee x Robustum ..	97	70	60
B.4362 x C.P.36-134	Noble x Glagah x Chunnee x Robustum ..	22	21	12
B.4457 x B.34104 ..	Noble x Local x Chunnee x Robustum ..	314	314	306
B.44233 x B.4098 ..	Noble x Local x Chunnee x Robustum .	525	300	251
B.4455 x B.4098 ..	Noble x Local x Chunnee x Robustum .	404	250	210
B.35218 x 32MQ.579	Noble x Local x Chunnee x Robustum ..	5	—	—
B.35218 x C.P.36-134	Noble x Local x Chunnee x Robustum ..	25	25	22
B.45223 x B.4098 ..	Noble x Local x Chunnee x Robustum ..	207	195	190
B.4092 x 32M.Q.135	Noble x Local x Chunnee x Robustum ..	—	—	—
B.4588 x B.4098 ..	Noble x Local x Chunnee x Robustum ..	130	130	106
B.45104 x 32M.Q.135	Noble x Local x Chunnee x Robustum ..	—	—	—
B.45107 x B.40123 ..	Noble x Local x Chunnee x Robustum ..	24	17	11
C.P.36-158 x B.34104	Noble x Glagah x Local x Chunnee x Robustum ..	1,320	250	201
B.45258 x B.44234 ..	Noble x Glagah x Local x Chunnee x Robustum ..	29	29	21
B.4523 x B.4098 ..	Noble x Glagah x Local x Chunnee x Robustum ..	—	—	—
		3,102	1,601	1,390

APPENDIX I.— *Concluded*

Cross	Derivation	No. Germinated	No. Potted	No. Planted in Field Nursery and/or First Year Trial
	S. officinarum x S. spontaneum x S. sinense			
B.3439 x B.35276 ..	Noble x Glagah x Sinense	—	—	—
	S. officinarum x S. spontaneum x S. barberi x S. sinense			
B.45117 x B.35269 ..	Noble x Local x Chunnee x Sinense	276	250	217
B.39254 x B.45122 ..	Noble x Local x Chunnee x Sinense	—	—	—
B.45316 x B.37261 ..	Noble x Glagah x Local x Chunnee x Sinense	68	68	54
B.45170 x B.37261 ..	Noble x Glagah x Local x Chunnee x Sinense	69	69	66
B.40272 x B.34104 ..	Noble x Glagah x Local x Chunnee x Sinense	200	150	136
B.40272 x B.4098 ..	Noble x Glagah x Local x Chunnee x Sinense	778	600	518
B.40272 x B.43234 ..	Noble x Glagah x Local x Chunnee x Sinense	30	30	24
B.40272 x Co.419 ..	Noble x Glagah x Local x Chunnee x Sinense	341	300	294
B.35218 x B.37261 ..	Noble x Glagah x Local x Chunnee x Sinense	13	13	9
B.40272 x Co.290 ..	Noble x Glagah x Local x Chunnee x Sinense	120	120	116
B.35197 x B.4543 ..	Noble x Glagah x Celebes x Chunnee x Sinense	110	110	85
B.35197 x B.45116 ..	Noble x Glagah x Celebes x Chunnee x Sinense	33	33	21
B.37226 x B.43290 ..	Noble x Glagah x Celebes x Chunnee x Sinense	36	35	35
		2,074	1,778	1,575
	S. officinarum x S. spontaneum x S. barberi x S. robustum x S. sinense			
B.4450 x B.45315 ..	noble x local x chunnee x robustum x sinense	18	18	14
		46,499	24,949	21,875

APPENDIX II

B.48' Series.

Details of Crosses Represented in the Field Nursery and in the First Year Seedling Trial.

Cross	Group	No. Planted in Field Nursery	No. Planted in First Year Seedling Trial
	S. officinarum x *S. spontaneum*		
Co.421 x B.4459 ..	Noble x Glagah	150	100
B.34102 x B.3337 ..	„ x „	150	100
B.44130 x B.603 ..	„ x „	30	25
Ba.11569 x B.4405 ..	„ x „	48	40
B.3439 x B.3337 ..	„ x „	300	250
B.3439 x Dacca ..	Noble x Dacca	48	40
B.3439 x B.39274 ..	Noble x Celebes	150	100
B.35247 x B.41211 ..	Noble x Local x Celebes ..	150	100
B.35197 x B.41211 ..	„ x „ x „	300	200
B.35247 x B.39220 ..	Noble x Glagah x Celebes ..	150	100
B.35247 x B.3337 ..	„ x „ x „	500	450
B.40157 x B.41211 ..	Noble x Glagah x Local ..	100	80
Co.421 x B.41211 ..	„ x „ x „	310	250
M.D.47 x B.41211 ..	„ x „ x „	150	100
B.39223 x B.41211 ..	„ x „ x „	150	100
Co.421 x B.41261 ..	„ x „ x „	100	80
P.O.J.2878 x B.41211 ..	„ x „ x „	150	100
B.35197 x B.40256 ..	Noble x Glagah x Local x Celebes	150	100
		3,086	2,315
	S. officinarum x *S. spontaneum* x *S. barberi*		
B.35197 x B.37193 ..	Noble x Celebes x Chunnee ..	300	200
B.3365 x B.41242 ..	Noble x Glagah x Chunnee ..	150	100
B.3365 x B.39220 ..	„ x „ x „	100	80
B.42304 x B.37193 ..	„ x „ x „	150	100
B.38260 x B.H.10(12)	„ x „ x „	90	70
B.3365 x B.4146 ..	„ x „ x „	150	100
B.38272 x B.37193 ..	„ x „ x „	150	100
B.4145 x B.37193 ..	„ x „ x „	300	200
B.35206 x B.34104 ..	Noble x Local x Chunnee ..	300	250
B.3365 x B.40123 ..	„ x „ x „	41	35
B.3365 x B.39268 ..	„ x „ x „	110	90
B.37161 x B.41211 ..	„ x „ x „	240	185
B.3365 x B.41255 ..	„ x „ x „	150	100
B.35218 x B.4098 ..	„ x „ x „	501	400
B.35207 x B.4098 ..	„ x „ x „	150	100
B.39177 x B.37193 ..	„ x „ x „	200	150
B.35218 x B.41255 ..	„ x „ x „	150	100
B.3439 x Co.290 ..	„ x „ x „	26	20

APPENDIX II—*Continued*

Cross	Group	No. Planted in Field Nursery	No. Planted in First Year Seedling Trial
B.4092 x B.37193 ..	Noble x Local x Chunnee ..	72	58
B.35206 x B.4098 ..	„ x „ x „	150	100
B.35247 x B.41227 ..	Noble x Celebes x Glagah x Chunnee ..	300	200
B.35197 x B.41226 ..	„ x „ x „	150	100
B.35197 x B.38192 ..	„ x „ x „	150	100
B.37162 x B.41228 ..	„ x „ x „	150	100
B.35197 x B.42231 ..	„ x „ x „	150	100
B.35247 x B.4226 ..	„ x „ x „	150	100
B.35197 x B.34104 ..	Noble x Celebes x Local x Chunnee ..	700	600
B.35197 x B.4098 ..	„ x „ x „	150	100
B.35197 x B.4098 ..	„ x „ x „	230	200
B.37227 x B.4098 ..	„ x „ x „	150	100
B.38233 x B.34104 ..	Noble x Glagah x Local x Chunnee ..	600	550
B.4145 x B.34104 ..	„ x „ x „	150	100
B.38272 x B.34104 ..	„ x „ x „	150	100
B.38203 x B.41211 ..	„ x „ x „	200	150
B.3439 x Co.419 ..	„ x „ x „	116	100
B.35218 x B.39250 ..	„ x „ x „	150	100
B.35218 x B.41242 ..	„ x „ x „	150	100
B.4145 x B.4098 ..	„ x „ x „	200	150
B.37161 x Co.419 ..	„ x „ x „	35	30
B.4214 x B.41203 ..	„ x „ x „	150	100
B.42279 x B.41276 ..	„ x „ x „	150	100
B.35218 x B.44236 ..	„ x „ x „	150	100
B.4097 x Co.419 ..	„ x „ x „	40	33
B.35218 x B.41276 ..	„ x „ x „	150	100
Co.421 x B.4098 ..	„ x „ x „	200	150
B.3354 x B.4098 ..	„ x „ x „	299	200
B.37266 x B.4098 ..	„ x „ x „	120	100
B.38272 x B.4098 ..	„ x „ x „	150	100
B.4096 x B(30)L7 ..	„ x „ x „	150	100
B.39253 x B.4098 ..	„ x „ x „	150	100
Co.421 x Co.290 ..	„ x „ x „	120	100
B.35247 x B.42114 ..	Noble x Glagah x Local x Celebes x Chunnee ..	150	100
		9,490	7,001
	S. officinarum x *S. spontaneum* x *S. sinense*		
B.35247 x B.37261 ..	Noble x Celebes x Glagah x Sinense ..	107	95
B.35247 x B.37224 ..	„ x „ x „ ..	70	53
		177	148
	S. officinarum x *S. spontaneum* x *S. barberi* x *S. Sinense*		
B.34117 x B.35269 ..	Noble x Glagah x Chunnee x Sinense ..	27	26
B.35207 x B.40270 ..	„ x „ x „ ..	16	10
B.3365 x B.40271 ..	„ x „ x „ ..	46	35
B.40272 x Co.290 ..	Noble x Glagah x Local x Chunnee x Sinense	87	80
		176	151

APPENDIX II– *Concluded*

Cross	Group	No. Planted in Field Nursery	No. Planted in First Year Seedling Trial
	S. officinarum x *S. robustum*		
B.4455 x B.H.10(12)	Noble x Robustum	150	100
Ba.11569 x B.44226 ..	„ x „	150	100
B.3439 x B.4453 ..	„ x „	110	90
B.3439 x B.44257 ..	„ x „	100	80
		510	370
	S. officinarum x *S. spontaneum* x *S. robustum* x *S. sinense*		
B.40272 x 32M.Q.657	Noble x Glagah x Robustum x Sinense ..	76	60
B.40272 x 28N.G.251	„ x „ x „ ..	100	70
		176	130
	S. officinarum x *S. barberi* x *S. sinense*		
B.35207 x B.35269 ..	Noble x Chunnee x Sinense ..	55	41
	S. officinarum x *S. barberi* x *S. robustum*		
B.44233 x B.37193 ..	Noble x Chunnee x Robustum ..	160	100
	S. officinarum x *S. barberi* x *S. spontaneum* x *S. robustum*		
B.4457 x B.4098 ..	Noble x Chunnee x Local x Robustum ..	140	100
	S. officinarum x *Erianthus arundinaceous*		
B.3439 x C.P.36-116	Noble x Erianthus	150	100
	S. officinarum x *S. spontaneum* x *Erianthus arundinaceous*		
B.34102 x 28N.G.7 ..	Noble x Glagah x Erianthus ..	29	20
	Grand Totals ..	14,149	10,476

APPENDIX III

Short Season Types B.s. 47' Series.

Details of Crosses Represented in the First Year Trial.

Cross	Group	No. Planted in First Year Trial
	S. officinarum x *S. spontaneum*	
B.35247 x B.3337 ..	Noble x Celebes x Glagah ..	455
Co.421 x B.41211 ..	Noble x Glagah x Local ..	494
P.O.J.2878 x B.41211..	„ x „ x „ ..	100
Co.421 x B.41261 ..	„ x „ x „ ..	90
		1,139
	S. officinarum x *S. barberi* x *S. spontaneum*	
B.38233 x B.34104 ..	Noble x Local x Glagah x Chunnee ..	120
Co.421 x B.4098 ..	„ x „ x „ ..	298
B.4145 x B.34104 ..	„ x „ x „ ..	298
B.35218 x B.4098 ..	Noble x Chunnee x Local ..	225
B.39177 x B.37193 ..	„ x „ x „ ..	94
B.35207 x P.O.J.2878	Noble x Chunnee x Glagah ..	293
B.4145 x B.37193 ..	„ x „ x „ ..	245
B.35197 x B.34104 ..	Noble x Celebes x Local x Chunnee ..	433
B.39157 x B.4098 ..	„ x „ x „ ..	230
		2,236
	Grand Total ..	3,375

APPENDIX IV.

ADVISORY COMMITTEE

FOURTEENTH MEETING.—JAMAICA.

September 23rd, 24th, 25th & 26th, 1947

The following representatives of the contributing colonies attended :—

Barbados	Dr. S. J. Saint, C.M.G., O.B.E., Director of Agriculture, (Chairman).
British Guiana	Mr. H. H. Croucher, Director of Agriculture.
Jamaica	Mr. D. Sturdy, O.B.E., Director of Agriculture.
Leeward Islands	Mr. C. A. S. Hynam, Superintendent of Agriculture, Antigua.
Trinidad	Dr. E. Phillis, Chief Scientific Officer.
Windward Islands	Mr. C. C. Skeete, Director of Agriculture.
British West Indies Sugar Association	Hon. R. L. M. Kirkwood, Chairman, Sugar Manufacturers' Association, Jamaica.

The following persons also attended some or all of the meetings :—

Hon. E. R. Dudley Evans, ..	Minister of Agriculture, Lands & Commerce, Jamaica, who kindly opened the proceedings and welcomed the delegates to Jamaica.
Mr. R. Johns, O.B.E., ...	Agricultural Adviser to the Comptroller for Development and Welfare.
Mr. P. E. Turner, ...	Sugar Agronomist, B.W.I.
Mr. K. S. Calder, ...	Chairman of Research Committee, Sugar Manufacturers' Association, Jamaica.
Mr. R. F. Innes, ...	Chemist, Research Department, Sugar Manufacturers' Association, Jamaica.
Mr. E. B. Martyn, ...	Plant Pathologist, Department of Agriculture, Jamaica.
Mr. B. deL. Inniss, ...	Botanist, British West Indies Central Sugar Cane Breeding Station.

Mr. H. J. Page, O.B.E., Principal of the Imperial College of Tropical Agriculture, was unable to attend the meeting owing to transport delays.

MEETINGS

Tuesday, September	23 ..	Morning.	Meeting of Committee.
		Afternoon.	Meeting of Committee.
Wednesday „	24 ..	Morning.	Visit to Department of Agriculture, Hope Gardens.
		Afternoon.	Meeting of Committee.
Thursday, „	25 ..	Morning.	Meeting of Committee.
		Afternoon.	Visit to Jamaica Sugar Estates Ltd.
Friday „	26 ..	Morning.	Meeting of Committee.
		Afternoon.	Visit to Bernard Lodge Estate.

PROCEEDINGS OF THE COMMITTEE

The proceedings of the Advisory Committee were as follows:—

PROGRESS REPORT ON THE WORK OF THE STATION

190. The Botanist submitted a progress report on the work of the station for the period 1st of October, 1945, to the 30th of September, 1947, together with the proposed breeding programme for 1947. The Committee noted that the policy of making interspecific crosses within the genus **Saccharum** and intergeneric crosses with closely allied plants was producing seedling populations of great promise.

191. The Committee noted that short season types of seedlings were now being selected for the special conditions of certain of the contributing colonies and the suggestion was made by the Jamaica representative that consideration might also be given

to the selection of longer season types which were being considered as possible commercial varieties on the irrigated lands of Jamaica. Since such selection would be difficult to make under Barbados conditions it was decided to send a larger number of seedlings to Jamaica where the selection of longer season types would be made.

192. The Committee was satisfied that good progress was being maintained, and Mr. Kirkwood on behalf of the B.W.I. Sugar Association, expressed appreciation of the excellent work which had been carried out at the Station.

DESPATCH OF SEEDLINGS TO THE PLANT QUARANTINE STATION

193. The Botanist gave a list of the B.43′ and B.44′ series of seedlings which had been sent to the Plant Quarantine Station in Trinidad during 1945 and 1946, and his recommendations for their distribution to the contributing colonies.

PERFORMANCE OF SEEDLINGS IN CONTRIBUTING COLONIES

194. A summary of the field performances of the newer varieties in the colonies of Antigua, St. Kitts, Trinidad, Jamaica, St. Lucia and Grenada, was presented by the Officers representing these colonies.

195. The Committee has previously noted that the relative performance of varieties varies with ecological conditions, and it has also recently been found to vary with cultivation methods practised within a given ecological area. The Committee accordingly again emphasize that when testing the relative merits of new varieties these facts should be given full consideration.

THE PLANT QUARANTINE STATION

196. The position with regard to quarantine in Trinidad of seedling canes distributed from Barbados to other British West Indian Colonies was fully reviewed. Dr. Phillis, a member of the Committee of the Plant Quarantine Station, stated that it was the considered opinion of the Quarantine Committee :

(a) that the cane specialists in Barbados were the authorities most competent to detect diseases in their canes; and

(b) unless highly elaborate precautions which were beyond practical application for the relatively large numbers of seedling canes received from Barbados for distribution were effected, there was more risk arising from passing material through the Quarantine Station than in transmitting the material direct from Barbados to the colony concerned.

197. The pests and diseases of sugar cane which could possibly be transmitted to other colonies from Barbados were:

(a) Insect pests

(b) Gummosis

(c) Mosaic disease

With regard to

(a) by reason of the precautions taken in Barbados prior to despatching planting material, the risk of transmitting insects is negligible;

(b) seedlings now distributed from Barbados are all highly resistant to gummosis, and the risk of transmitting this disease in the future is also negligible;

(c) the risk of introducing mosaic disease into British Guiana and the Windward and Leeward Islands was regarded as small and could be completely eliminated only if the highly elaborate precautions already referred to in the previous paragraph were introduced. The risk of introducing exotic strains into Trinidad and Jamaica was regarded as negligible.

198. The Committee noted that there is no record in the history of the Plant Quarantine Station of any seedling plant material sent from Barbados to Trinidad carrying mosaic disease, and that mosaic disease has never been recorded in the Barbados nurseries from which cuttings are selected for export. With the introduction of new nobilised seedlings, mosaic disease has become rare in Barbados.

199. The Committee recommended that since adequate protection at least equal to that afforded by the maximum practical quarantine in Trinidad could be effected in Barbados, seedling planting material should be distributed, by permit where necessary, to the Departments of Agriculture of the contributing colonies.

200. As an additional safeguard, the Committee decided that the Directors of Agriculture to whom seedling planting material had been sent should be immediately notified if symptoms of mosaic disease developed on the parent stools within a period of three months from the time at which cuttings had been taken, since after such a period it could be safely assumed that the cuttings despatched were free of mosaic disease. A certificate to this effect would be issued at the end of this period.

201. The Committee recommended that seedling planting material received from Brabados should be segregated and kept under close observation until such certificate is received.

202. The Chairman asked that the Directors of Agriculture of the contributing colonies should inform him as soon as they were in a position to receive seedling planting material direct from Barbados since no further seedlings would be sent through the Plant Quarantine Station in Trinidad.

203. In view of the present unsatisfactory conditions of quarantine at the Plant Quarantine Station, the Advisory Committee of the Plant Quarantine Station had reported that they are not prepared to quarantine any material from outside the West Indian area until effective quarantine buildings are available, and information was being obtained of improved types of quarantine houses.

204. The Committee decided to ask the Chairman of the Plant Quarantine Station to expedite the present enquiries and the erection of the new quarantine house.

205. The Committee stressed the urgent necessity of such a new quarantine house to enable the introduction of further cane breeding material for the use of the Cane Breeding Station, and the Chairman was asked to continue to stress the urgency of the matter.

THE EXPORT OF VARIETIES TO FOREIGN COUNTRIES

206. The Chairman informed the Committee that representative organisations of the countries of Martinique, Guadeloupe and Venezuela had agreed to pay an annual contribution to the expenses of the Station in return for the new varieties produced by the Station. The Chairman also informed the Committee that in accordance with Minute No. 162 the question of obtaining annual subscriptions to the funds of the Station from the U.S. dependencies had been taken up through the Comptroller for Development and Welfare and the Caribbean Commission, but in view of the attitude of the Puerto Rican authorities, the Committee decided that the matter should not be further pursued.

207. The Chairman stated that he had been approached by the Sugar Producers' Association of the Dominican Republic for cuttings of new Barbados canes. He had despatched cuttings of two varieties in accordance with the terms of Minute 104, but had informed the Association that subsequent requests would only be granted if the Association became an annual contributor to the funds of the Station. If this matter were further pursued, the Committee decided that the Sugar Producers' Association of the Dominican Republic should be asked to pay an annual subscription of £1,000 to the funds of the Station.

REPRESENTATION OF JAMAICA ON THE ADVISORY COMMITTEE

208. The Director of Agriculture, Jamaica, informed the Committee that the Research Department of the Sugar Manufacturers' Association would, in future, be responsible for all sugar cane investigational work carried out in Jamaica, and wished to know whether the Sugar Manufacturers' Association could be represented on the Committee. After a full discussion, the Committee decided that, although no permanent seat could be allocated for such representation, there should be no difficulty in meeting the wishes of the Sugar Manufacturers' Association under the constitution of the Advisory Committee as set out in Minute No. 167.

THE APPOINTMENT OF A CYTO-GENETICIST TO THE STAFF OF THE STATION

209. The Committee considered a memorandum by the Chairman recommending that an application should be submitted to the Comptroller for Development and Welfare for financial assistance to permit the appointment of a Cyto-Geneticist to the staff of the Station.

210. After a full discussion of the memorandum, the Committee decided that the Chairman and Mr. Johns should draw up an application for financial assistance and that such application should provide the necessary capital and recurrent expenditure to permit the appointment of a Cyto-Geneticist to the staff of the Station for a period of ten years. This application should then be submitted through the usual channels with a request for early and favourable consideration.

THE CHARDON-PATERSON "SURVEY OF AGRICULTURAL RESEARCH IN THE CARIBBEAN AREA"

211. The Committee discussed fully the section of the draft report by Dr. Chardon and Professor Paterson recommending that "the headquarters of specialised research in sugar cane breeding should be sited at the Rio Piedras Experimental Station, San Juan, Puerto Rico."

212. The Committee recorded its complete disagreement with this recommendation and decided that the Chairman should so inform the Comptroller for Development and Welfare.

213. The Committee was informed that the British West Indies Sugar Association considered this recommendation in May 1946 and thereafter passed the following Resolution:—

> "This Association desires to place on record its complete satisfaction with "the work and achievements both past and present of the British West Indies "Central Sugar Cane Breeding Station located in Barbados and would view "with dismay any attempt to interfere with the work now being done and "planned at this Station since any such action would in its opinion be in the "nature of a major disaster to the interests of the British West Indies sugar "industry."

214. It was decided that a copy of the letter and appendices which the Chairman had sent to Dr. Eric Williams on this subject and which met with the unanimous approved of the Committee should be sent to the Committee for Agriculture, Animal Health and Forestry Research with a request that Barbados should be recognised by the Committee as the centre for cane breeding research in the British West Indies.

FINANCE

215. The Chairman informed the Committee that the cost of wages and materials had increased considerably during the past two years, and with any further increase in the price of sugar, further wage increases would be inevitable. In the financial year 1946—47 these increased costs had been partially met by an increased expenditure on the part of Barbados and partly from savings accumulated in previous years from the grants received from the contributing colonies. For the financial year 1947-48 there wouold be insufficient funds available from savings to meet this increased expenditure, and if the standard of work carried out by the Station was to be maintained, increased contributions from the colonies were essential.

216. The Committee recommended that in view of these increasing costs, the grants from the contributing colonies should be increased and the present system of contribution should be revised so that each contributing colony should subscribe on a pro-rata basis of sugar production based on the previous three years' average annual production of sugar. The subscription rate for the Station's financial year October 1, 1947, to 30th September, 1948, should be at the rate of thirty shillings per 100 tons of sugar produced during the calendar years 1944, 1945 and 1946. It is estimated that the average production of sugar in the British West Indies, excluding Barbados, for the three years 1944—46, was 450,000 tons which, on a basis of thirty shillings per 100 tons, would net the sum of £6,750 to the funds of the Station. The estimated expenditure of Barbados on cane breeding for the year 1947—48 was £6,690.

217. The Committee considered that British Guiana should be asked to enter into this new arrangement only if and when the sugar interests were reasonably sure that canes produced by the Station would be of value under their ecological conditions.

218. The Committee decided that any subscription from foreign countries should be placed in a reserve account to be used for the purpose of furthering the work of the Station as the Committee may recommend.

219. On the basis of a revenue of approximately £6,750 from sources other than Barbados, the Committee approved the estimate of expenditure for the financial year 1947—48 as set out below.

Item	Voted 1946-47	Actual Expenditure 1946-47	Estimates 1947-48	Est. Expenditure on Cane Breeding by B'dos Govt. 1947-48	Estimated Total Expenditure on Cane Breeding 1947-48
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Personal Emoluments					
Chairman	100 0 0	100 0 0	100 0 0	—	—
Cost of Living Allowance ..	—	—	—	—	—
Botanist	600 0 0	600 0 0	625 0 0	—	—
Cost of Living Allowance ..	140 0 0	140 0 0	140 0 0	—	—
Two Agric. Assts. ..	483 10 0	483 6 8	508 10 0	—	—
Cost of Living Allowance ..	161 0 0	160 16 5	168 10 0	—	—
Two Part-Time Agric. Assts. ..	125 0 0	125 0 0	125 0 0	—	—
Cost of Living Allowance ..	—	—	52 0 0	—	—
Clerical Assistance	50 0 0	50 0 0	50 0 0	—	—
Cost of Living Allowance ..	—	—	13 0 0	—	—
Statistical Clerk ..	159 10 0	159 7 6	172 0 0	—	—
Cost of Living Allowance ..	58 0 0	57 16 3	62 0 0	—	—
	1,877 0 0	1,876 6 10	2,015 0 0	2,694 0 0	4,709 0 0
Provident Fund ..	55 0 0	55 0 0	150 0 0	—	150 0 0
Seedling Trials ..	2,350 0 0	2,350 0 0	2,850 0 0	3,139 0 0	5,989 0 0
Stationery & Library	50 0 0	50 0 0	200 0 0	65 0 0	265 0 0
Travelling	550 0 0	550 0 0	550 0 0	660 0 0	1,210 0 0
Incidentals	35 0 0	35 0 0	35 0 0	132 0 0	167 0 0
Capital	600 0 0	600 0 0	1,000 0 0	—	1,000 0 0
	5,517 0 0	5,516 6 10	6,800 0 0	6,690 0 0	13,490 0 0

REVENUE FROM CONTRIBUTING COLONIES FOR FINANCIAL YEAR 1947—1948

Colony	Present Rate of Subscription	Average Production of Sugar for Calendar Years 1944-46	Proposed rate of Subscription at 30s. per 100 tons Sugar
	£ s. d.	Tons	£ s. d.
British Guiana	1,200 0 0	155,575	2,333 12 6
Jamaica	1,225 0 0	160,664	2,409 19 2
Leeward Islands	600 0 0	51,476	772 2 9
Trinidad	1,200 0 0	86,737	1,301 1 0
Windward Islands	135 0 0	8,252	135 0 0
Total	4,360 0 0		6,951 15 5
Estimated savings at end of 1946-47 financial year ..	1,200 0 0		1,200 0 0
	5,560 0 0		8,151 15 5
Estimated Expenditure ..	6,800 0 0	Estimated savings at end of 1947-48 financial year	6,800 0 0
Estimated over-expenditure at end of 1947-48 financial year	1,240 0 0		1,351 15 5

ESTIMATED REVENUE FROM FOREIGN COUNTRIES
FOR FINANCIAL YEAR 1947-48

Venezuela	.. ..	£200
Martinique	.. ..	£200
Guadeloupe	.. ..	£200
		£600

220. The Committee decided that the Botanist should be entitled to draw subsistence rates on the basis of those drawn by members of the Committee and that superannuation of full-time staff of the Station should be on the same basis as that prevailing at the Imperial College of Tropical Agriculture.